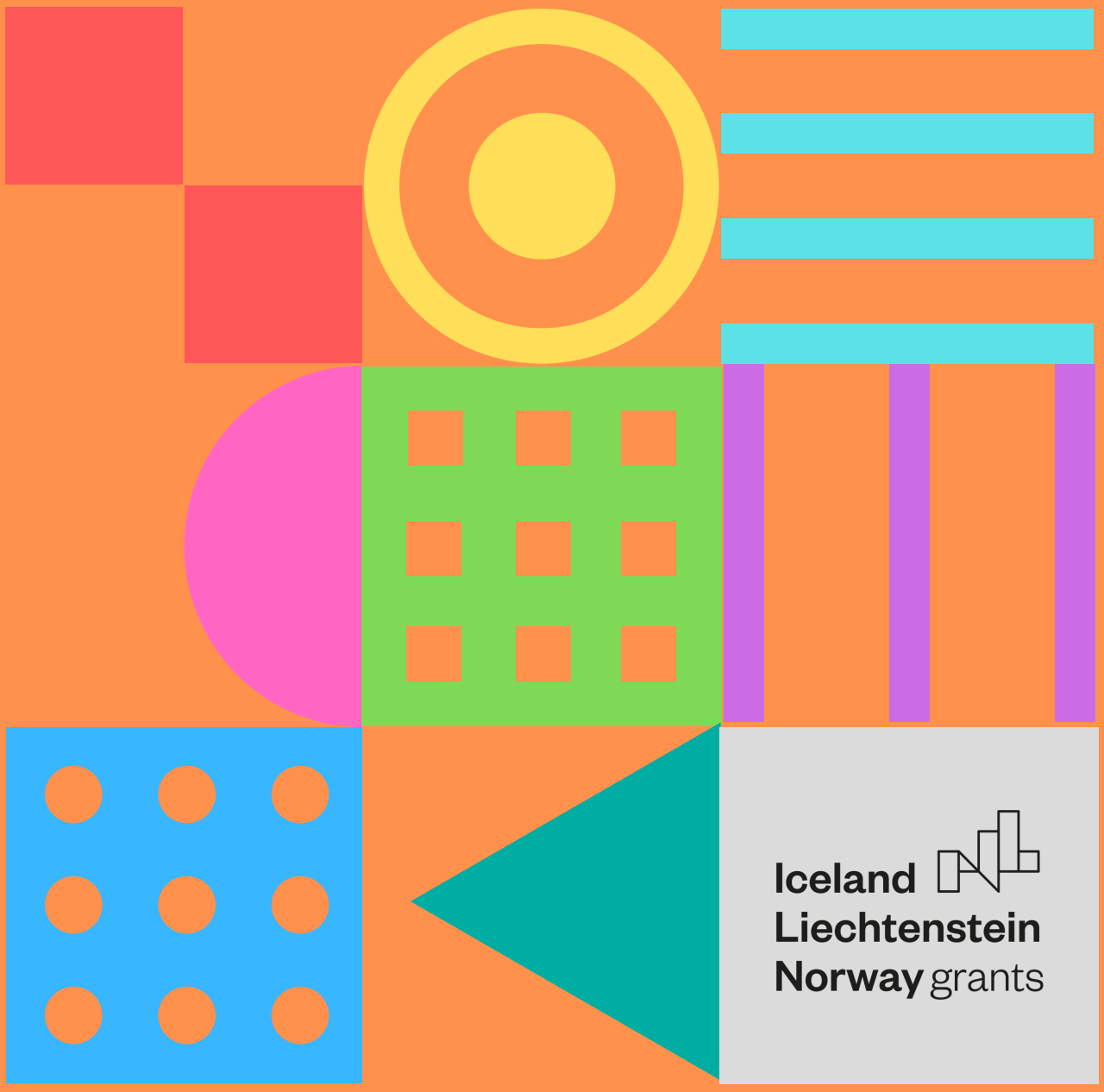
W kierunku edukacji XXI wieku

Towards education of the 21st century

Podróż w kierunku globalnych kompetencji
The journey to global competency



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PROJEKT

Podróż w kierunku globalnych kompetencji
The journey to global competency

Projekt jest odpowiedzią zarówno na zmiany zachodzące we współczesnym świecie, jak i na potrzebę rozwijania globalnych kompetencji uczniów i nauczycieli m.in. rozumienia różnych punktów widzenia, współpracy opartej na szacunku oraz podejmowania odpowiedzialnych działań na rzecz zrównoważonego rozwoju.

W projekcie chcemy pokazać, że szkoła uczy rozumienia świata metodą krytycznej konfrontacji informacji z różnych dziedzin. Poprzez realizację działań związanymi z Celami Zrównoważonego Rozwoju ONZ pragniemy uświadomić odbiorcom relacje szkoły z otaczającym światem oraz podkreślić wagę odpowiedzialności każdego człowieka będącego obywatelem szkoły świata.

Dużą wagę przywiązujemy do rozwoju kompetencji nauczycieli i kadry zarządzającej szkołą - społeczności odpowiedzialnej za zarządzanie oraz proces kształcenia. Efektywne wykorzystanie nowych technologii, rozwijanie kompetencji globalnych, wirtualna współpraca z ekspertami i uczniami z całego świata oraz zastosowanie otwartych zasobów edukacyjnych uczynią projekt niezwykle innowacyjnym.

The main concern of the project is to respond both to the changes that are taking place in the world and to the need of developing global competences of pupils and teachers. We have to prepare students for an interconnected world in which they can understand and appreciate different perspectives and world views, interact successfully with others, and take responsible action towards sustainability.

We wish to demonstrate that school can teach about the world by interacting within a variety of disciplines and domains. Being involved in activities associated with the Sustainable Development Goals weintend to make others aware that school is a part of the world for whose well-being we are all responsible.

We are also concerned about the development and competence of teachers and the school's managers, who are responsible both for the educational process and for the way the school is run.

The project is innovative in its application of new technologies, development of global competences, virtual co-operation with experts and pupils from all over the world and an access to open resources.

Inicjatywa ma na celu realizację 3 mini projektów, z których to przedsięwzięcia 1. i 2. są skierowane do nauczycieli, a 3. do uczniów. Praca nad każdym mini projektem będzie odbywała się w trzech etapach:
Etap 1 - praca we własnej szkole w ramach zajęć szkolnych, polegająca na gromadzeniu i analizie materiałów oraz współpraca on-line z partnerem norweskim;
Etap 2 - wspólne lekcje oraz warsztaty w czasie wizyty roboczej w szkole partnerskiej, podczas której zostanie przedstawiona prezentacje efektów;
Etap 3 - rozpowszechnianie efektów pracy w każdej szkole oraz w środowisku lokalnym, a także w szerszej społeczności.

Planujemy zrealizować następujące miniprojekty:

W kierunku edukacji XXI wieku
Nauczyciele w zespołach polsko-norweskich opracują scenariusze lekcji dotyczące Celów Zrównoważonego Rozwoju ONZ. Podczas spotkań polsko-norweskich zostaną przeprowadzone wspólne lekcje. Powstanie kolekcja scenariuszy na platformie Wakelet oraz tradycyjna publikacja.

Czy jestem demokratycznym nauczycielem?
Projekt będzie polegał na przeprowadzeniu wspólnych polsko-norweskich warsztatów odnoszących się do pracy z uczniami oraz zarządzania szkołą. Podczas spotkań zostaną zaprezentowane autorskie Cards for Democracy. Konkluzje zostaną przedstawione za pomocą programu Padlet oraz w formie klasycznej publikacji.

W jaki sposób możemy uczynić nasz świat lepszym?
W zespołach polsko-norweskich uczniowie pod nadzorem nauczycieli będą poszukiwać rozwiązań, wdrażać działania oraz rozpoznawać problemy zarówno globalne, jak i lokalne. Przygotowana zostanie publikacja podsumowująca działania z wykorzystaniem aplikacji Sway oraz w formie tradycyjnej.

Within the whole project we distinguish 3 mini-projects, the 1st and 2nd ones of which are dedicated to teachers, and the 3rd one concerns pupils.
Working on each mini project will proceed according to three stages:
Stage 1 includes working in our own school as part of class activity, collecting and analysing data and materials, co-operating online with our Norwegian partner.
Stage 2 consists in workshops, lessons taught during a working visit in the partner school, presentation of the results.
Stage 3 involves dissemination of the results of the work in each school, but also among the local and global communities.

The following mini-projects will be organized:

Towards the 21st century education
In mixed Polish-Norwegian teams teachers will prepare scenarios of lessons focused on Sustainable Development Goals. There will be lessons conducted by mixed teams, and the collection of scenarios will be placed on the Wakelet platform. A paper publication will be made.

Am I a democratic teacher?
There shall be prepared and conducted Polish-Norwegian workshops concerning methods of teaching and school management, with the use of Cards for Democracy. The conclusions shall be available on Padlet. A paper publication will also be arranged.

How can we make the world a better place?
In Polish – Norwegian teams pupils, supervised by their teachers, learn to recognize global and local problems, look for solutions and implement remedies. A publication will be made, which will sum up our work on the project, both through Sway and in the traditional form.

Mini projekt: W kierunku edukacji XXI wieku

Mini project: Towards education of the 21st century

EDUCATION ON SUSTAINABLE DEVELOPMENT

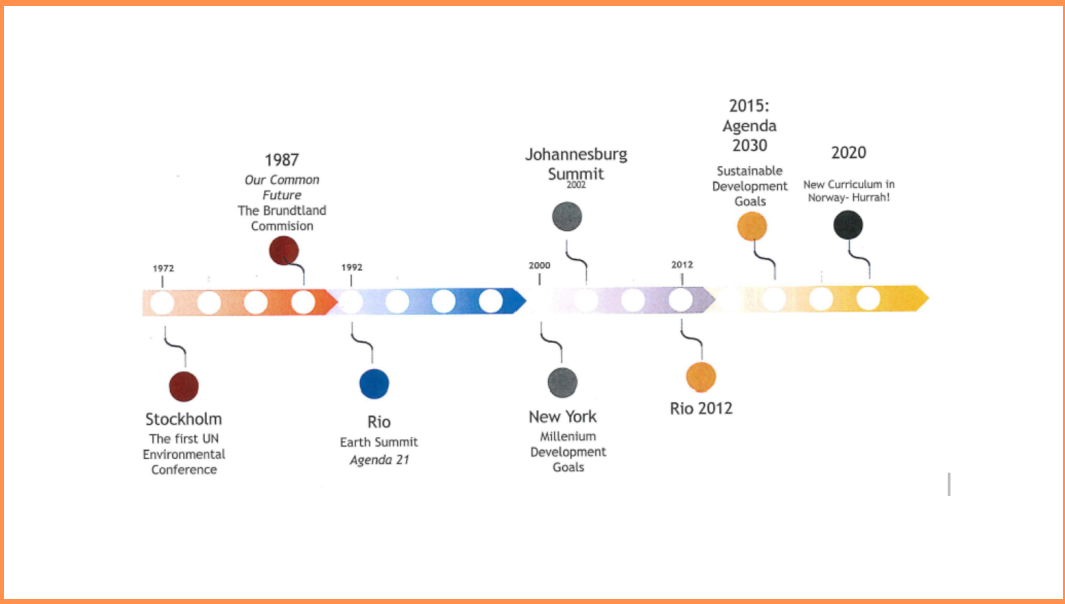
Two schools, two different educational systems, one project: towards 21st century education. Atlanten Videregående Skole from Norway and Kolegium Europejskie from Cracow met again to focus on education based on sustainable development. As a result of this cooperation both parts created learning scenarios starting from particular sustainable development goals. Both Norwegian and Polish teachers prepared lessons and conducted them in each other's schools. The main goal was to emphasize the importance of SDGs in the teaching and learning process.

Dwie szkoły, dwa różne systemy edukacyjne, jeden projekt: w kierunku edukacji XXI wieku. Atlanta Videregående Skole z Norwegii i Kolegium Europejskie z Krakowa spotkałysię ponownie, aby skupić się na edukacji opartej na zrównoważonym rozwoju. W wynikutej współpracy obie strony stworzyły scenariusze zajęć, wychodząc od założeń poszczególnych celów zrównoważonego rozwoju. Zarówno norwescy, jak i polscy nauczyciele przygotowali lekcje i przeprowadzili je w swoich szkołach. Głównym celem było podkreślenie znaczenia omawianego tematu w procesie nauczania i uczenia się.

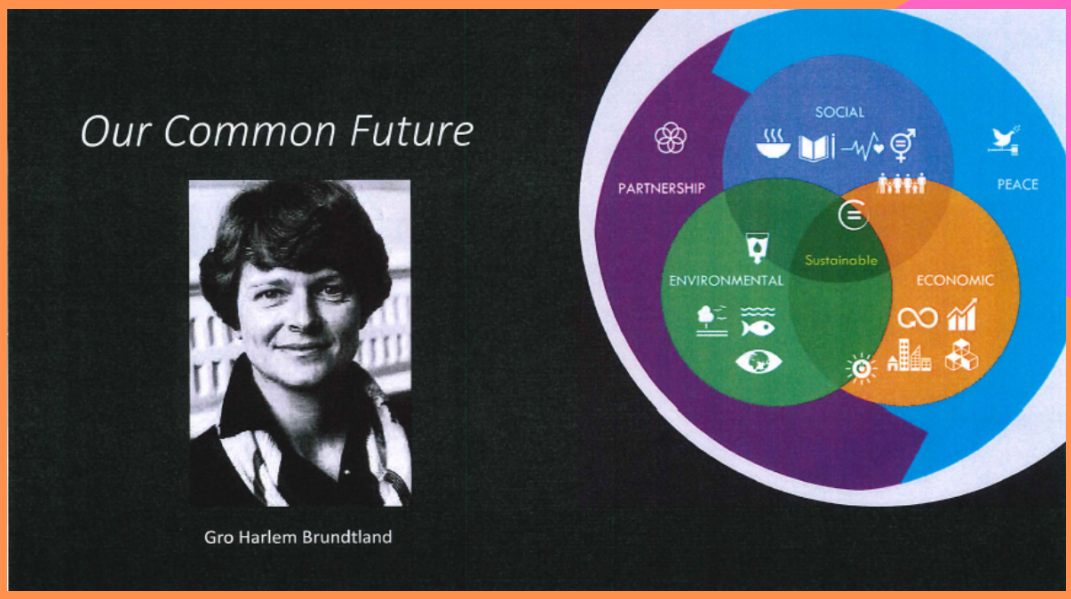
HISTORICAL CONTEXT

50 years ago, in Stockholm 1972, the first United Nations environmental conference was held. It was initiated by the Swedish government, who argued that humanity changed their natural surroundings in a way that created problems for both developed and developing countries, and these problems must be solved through international cooperation (Olerud, 2020a). The result of this conference was the “Declaration on the Human Environment” and the creation of The UN Environmental Program (UN, 2012, Olerud, 2020a). The next UN environmental conference was held in Rio in 1992. However, in the meantime UN had set up a commission: World Commision on Environment and Development. They were asked to formulate “A global agenda for change” (Brundtland, 1987, p.5).

50 lat temu, w Sztokholmie w 1972 roku, odbyła się pierwsza konferencja środowiskowa Organizacji Narodów Zjednoczonych. Jej inicjatorem był szwedzki rząd, który dowodził, że ludzkość zmieniła swoje naturalne otoczenie w sposób niekorzystny, stwarzając zagrożenie zarówno dla krajów rozwiniętych, jak i rozwijających się, a trudności te muszą zostać rozwiązane poprzez współpracę międzynarodową (Olerud, 2020a). Rezultatem tej konferencji była Deklaracja w sprawie środowiska człowiekai utworzenie Programu Środowiskowego ONZ (UN, 2012, Olerud, 2020a). Kolejna konferencja środowiskowa ONZ odbyła się w Rio w 1992 roku. Jednak w międzyczasie ONZ powołało komisję World Commission on Environment and Development, która została zaproszona do sformułowanie "globalnej agendy zmian" (Brundtland, 1987, s.5).



HISTORICAL CONTEXT



The commission, whose chairman was the Norwegian politician and prime minister, Gro Harlem Brundtland, issued the report “Our common future” in 1987, and it is in this report the concept of sustainable development appeared. Sustainable development was defined in these words: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987). In this report, the link between environmental, social and economical issues are important, and what is known as the three dimensions of sustainable development. The report also states that we all have a responsibility when it comes to sustainable development, not just states and governments, but also small and big companies and all the rest of us.

Komisja, której przewodniczącą była norweska polityk i premier, Gro Harlem Brundtland, wydała w 1987 roku raport o nazwie Nasza wspólna przyszłość. To właśnie w tym dokumencie pojawiło się pojęcie zrównoważonego rozwoju, które zostało zdefiniowane w słowach: "Zrównoważony rozwój to rozwój, który zaspokaja potrzeby teraźniejszości bez uszczerbku dla zdolności przyszłych pokoleń do zaspokojenia własnych potrzeb" (Brundtland, 1987). W raporcie podkreślono znaczenie zależności między aspektami środowiskowymi, społecznymi i ekonomicznymi, które znane są jako trzy wymiary zrównoważonego rozwoju. Raport stwierdza również, że my wszyscy jesteśmy odpowiedzialni za zrównoważony rozwój -nie tylko państwa i rządy, ale również małe i duże firmy.

HISTORICAL CONTEXT

In 1992 in Rio took place a conference which is known as the “Earth Summit”. This conference resulted in a plan for a sustainable future, named **Agenda 21**. In this plan, education is emphasized as one of the most important factors to promote education for sustainable development (UN, u.å).

> (...) for achieving environmental and ethical awareness, values and attitudes, skills and behavior consistent with sustainable development and for effective public participation in decision-making” (UN, 1992, s320).

Further on, in 2000 the Millennium Developments Goals were passed in the UN in New York. The ambition was to exterminate poverty in the developing countries (UN, u.å b). Later on, in a UN summit in Rio 2012, the UN member states decided to develop what we today know as UN sustainable development goals.
Transforming Our World: The Agenda 2030 for Sustainable Development by 2030 (Olerud & Tjernshaugen, 2020, UN, u.å d).

The UN SDGs was adopted by all UN member states in 2015, and consists of 17 goals and 169 targets. “Leave no one behind” is an important principle behind all 17 goals (Ravndal, 2020). The SDGs represent a whole new way to think about development, and in a way they make all the countries in the world developing countries (Moore, 2015).
Summing up, it's extensive work done by the UN over the last 50 years, which has led politicians, governments, companies and people in general to engage in sustainable development. And it’s clear that education is seen as a key to success.

HISTORICAL CONTEXT

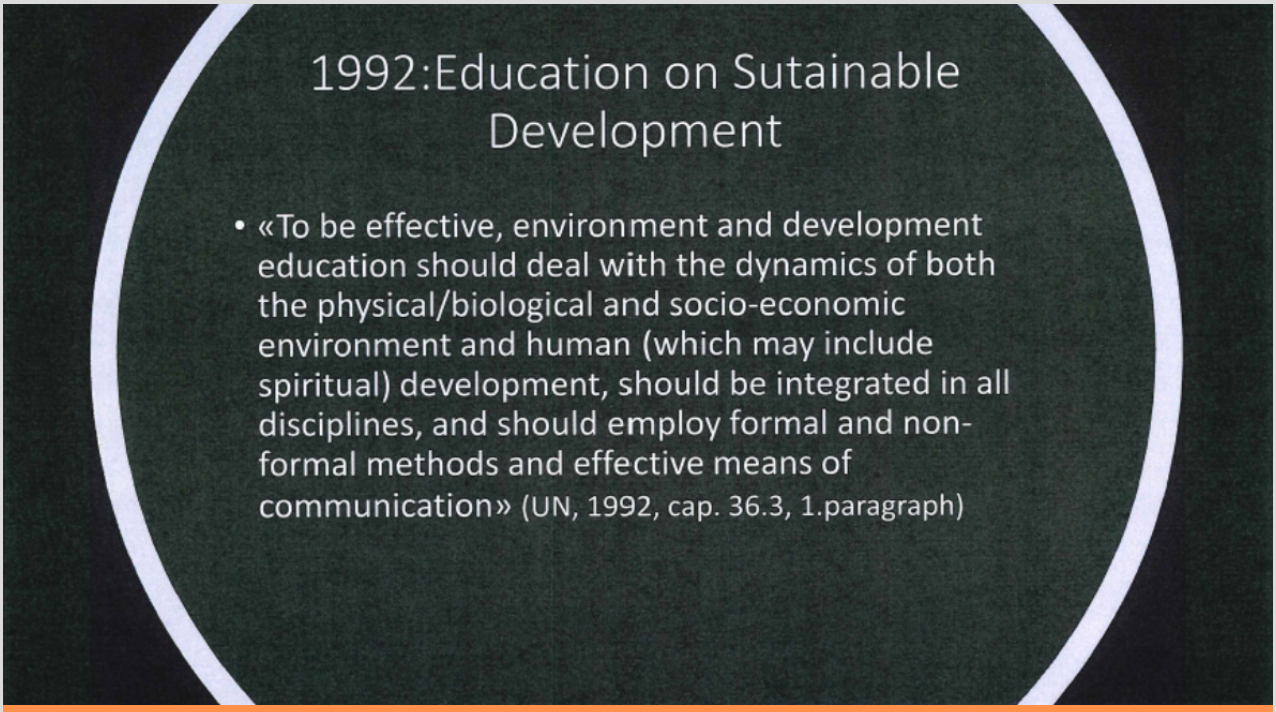
W 1992 roku w Rio odbyła się konferencja, która znana jest jako Szczyt Ziemi.W wyniku tego forum powstał plan na rzecz zrównoważonej przyszłości, nazwany Agendą 21. W dokumencie tym podkreślono, że jednym z najważniejszych czynników promujących edukację dla zrównoważonego rozwoju jest edukacja (ONZ, u.å).

"(...) dla osiągnięcia świadomości ekologicznej i etycznej, wartości i postaw, umiejętności i zachowań zgodnych z zasadami zrównoważonego rozwoju oraz dla efektywnego udziału społeczeństwa w podejmowaniu decyzji" (ONZ, 1992, s320).

Następnie, w 2000 roku w ONZ w Nowym Jorku uchwalono Milenijne Cele Rozwoju, mając na celuwytępienie ubóstwa w krajach rozwijających się (ONZ, u.å b).Później, na szczycie ONZ w Rio 2012, państwa członkowskie ONZ zdecydowały się na opracowanie tego, co dziś znamy jakoCele Zrównoważonego Rozwoju ONZlub Agendą 2030(Olerud & Tjernshaugen, 2020, UN, u.å d).

SDGs zostały przyjęte przez wszystkie kraje członkowskie ONZ w 2015 roku i składają się z 17 celów i 169 zadań. "Nie zostawiaj nikogo w tyle" - to zasada stojąca za wszystkimi celami (Ravndal, 2020). SDGs stanowią zupełnie nowy sposób myślenia o rozwoju i w pewnym sensie sprawiają, że wszystkie kraje na świecie stają się krajami rozwijającymi się (Moore, 2015). Podsumowując, ta ogromna praca wykonana przez ONZ w ciągu ostatnich 50 lat doprowadziła polityków, rządy, firmy i całej społeczności do zaangażowania się w koncepcję zrównoważonego rozwoju.
I oczywistym jest, że edukacja jest kluczem do sukcesu!

NORWEGIAN CURRICULUM



We can find traces of this work in the Norwegian curriculums as far back as the 1970s. In the 70s the main focus was environmental education. However, in 1992 the Education on sustainable development (ESD) was introduced, as a result of the report from 1987, Our Common Future. We can find these principals in the Norwegian curriculums from 1992 and forward, although they don't use the term Education on sustainable development. But ideas of interdisciplinary education, and sustainable development-topics are present, in subjects such as geography, social studies and natural science.

Ślady tej pracy możemy znaleźć w norweskich programach nauczania już w latach 70., kiedy głównym przedmiotem zainteresowania była edukacja ekologiczna. Niemniej jednak, w 1992 roku wprowadzono edukacjęo zrównoważonym rozwoju (ESD), co było wynikiem raportu z 1987 roku -Nasza wspólna przyszłość. Te zasady możemy znaleźć w norweskich programach nauczania od 1992 roku i dalej, choć nie używają one terminu edukacja o zrównoważonym rozwoju. Jednak idee edukacji interdyscyplinarnej i tematyka zrównoważonego rozwoju są obecne w takich przedmiotach, jak geografia, wiedza o społeczeństwie i nauki przyrodnicze.

NORWEGIAN CURRICULUM

The new curriculum consists of three defined interdisciplinary topics, topics that are seen as major challenges in our global community today.

1. **Health and life skills.**
2. **Democracy and citizenship,**
3. **Sustainable development.**

The aim is to give the pupils a holistic understanding of complex topics (Udir, 2020). This means that sustainable development is emphasized as an important topic in many subjects, and also it acknowledges interdisciplinary education. However, the teachers in Norway are free to use any methods of teaching, and therefore the curriculums do not force the teachers to engage in fully interdisciplinary cooperation.

Nowy program nauczania składa się z trzech zdefiniowanych interdyscyplinarnych tematów, tematów, które są postrzegane jako główne wyzwania w naszej globalnej społeczności:

1. **Zdrowie i umiejętności życiowe,**
2. **Demokracja i obywatelstwo,**
3. **Zrównoważony rozwój;.**

Celem programu jest zapewnienie uczniom holistycznego zrozumienia złożonych tematów (Udir, 2020). Oznacza to, że zrównoważony rozwój jest tematem eksponowanym podczas nauki wielu przedmiotach, a także obejmują edukację interdyscyplinarną. Niemniej jednak, nauczyciele w Norwegii mogą swobodnie stosować dowolne metody nauczania, dlatego programy nie zmuszają prowadzących do angażowania się w pełni interdyscyplinarną współpracę.

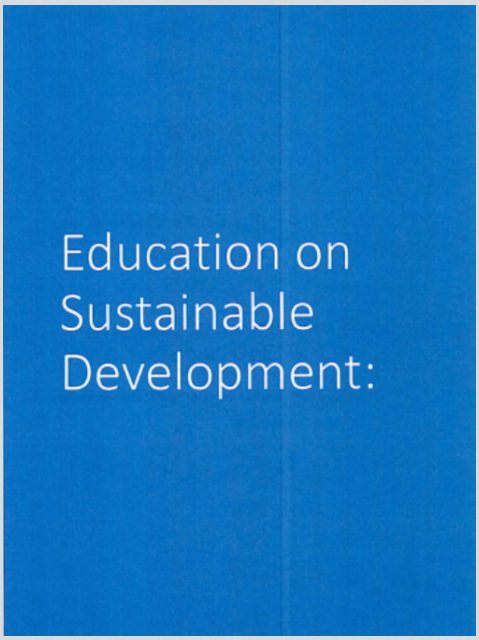
NORWEGIAN CURRICULUM

In 2002 the Decade for Education on Sustainable development was adopted by the UN. The Norwegian strategy consists of several practical initiatives organized through something called “Den naturlige skolesekken” (the natural school bag), organized through the university in Oslo (Straume, 2016).
Studies show that a lot of the teachers never heard of any of this, even teachers who teach natural science. Research also points out that the education that was given focused on the environmental dimension of sustainable development, and not a holistic perspective on all three dimensions (Sundstrøm, Killengren, Misund og Koller, 2019) (Sinnes & Straume, 2017). So, up to 2020, the education given on sustainable development was provided by selected subjects, often driven by teachers who were especially interested in SD.
However, the new curriculums that were implemented in 2020, provides a good framework for Education on Sustainable Development.

NORWEGIAN CURRICULUM

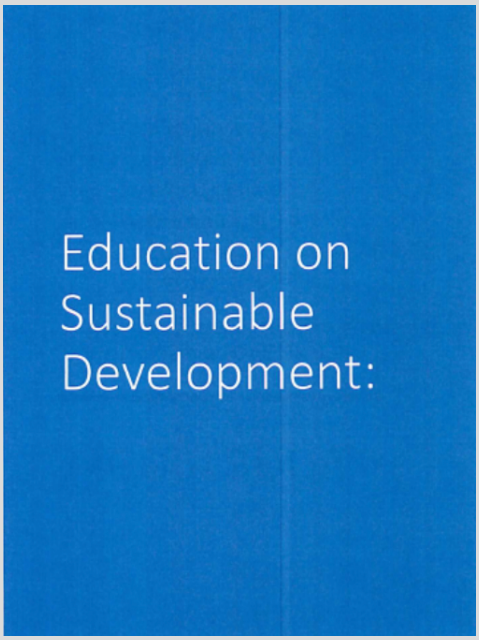
W 2002 roku ONZ przyjęła Dekadę Edukacji na rzecz Zrównoważonego Rozwoju. Norweska strategia składasię z kilku praktycznych inicjatyw organizowanych poprzez akcję "Den naturlige skolesekken" (naturalny tornister), przygotowanej poprzez uniwersytet w Oslo (Straume, 2016). Badania pokazują, że wielu nauczycieli nigdy nie słyszało o tej akcji, nawet nauczyciele, uczący przedmiotów przyrodniczych. Analizy wskazują również, że edukacja skupiała się na środowiskowym wymiarze zrównoważonego rozwoju, a nie na holistycznej perspektywie wszystkich trzech wymiarów (Sundstrøm, Killengren, Misund og Koller, 2019) (Sinnes & Straume, 2017). Zatem, do 2020 roku edukacja prowadzona w zakresie zrównoważonego rozwoju odbywała się w ramach wybranych przedmiotów, często kierowanych przez nauczycieli szczególnie zainteresowanych tą tematyką. Nowe programy nauczania, które zostały wdrożone w 2020 roku, zapewniają dobre ramy dla edukacji o zrównoważonym rozwoju.

NORWEGIAN CURRICULUM



1. **Updated and valid knowledge**.
2. I**nterdisciplinary approach**.
3. **Engaging the pupils** in SD through exploration and problem-solving,
4. **Learning from discipline** by giving the pupils knowledge and skills in different subjects, and at the same time teach them how this can be transformed to everyday life.
5. **Work with local sustainable problems** according to the saying “think globally, act locally”. Giving the students opportunities to get first-hand experiences of how dealing with sustainability problems involved ecological, social and economics aspects. All that gives the pupils practice in how to take into account these three different perspectives and use and apply knowledge from science, mathematics, economics, geography etc in the problem-solving.
6. **Pluralism** - it is important to provide many different perspectives in education, the different dimensions, different geographical levels, and also different concepts of knowledge. SD involves prioritizing, and pluralism gives the pupils insights in different views and solutions, which may increase their engagement.
7. **The whole school approach** - it’s important to make the school a learning area where the pupils and the teachers get to make sustainable choices in their everyday life at school. It provides the pupils a possibility to practice their competence ao action, which is articulated as one of the goals in the Norwegian curriculum.

NORWEGIAN CURRICULUM



Solidna edukacja w zakresie zrównoważonego rozwoju składa się z następujących cech lub zasad:

1. **Aktualna i obowiązująca wiedza**;
2. **Interdyscyplinarne podejście;**
3. **Zaangażowanie uczniów** w zrównoważony rozwój poprzez badanie i rozwiązywanie problemów;
4. Uczenie przedmiotu poprzez przekazywanie uczniom wiedzy i umiejętności z różnych przedmiotów, a jednocześnie pokazywaniem im, jak można to przełożyć na **życie codzienne**.
5. **Praca z lokalnymi problemami** zgodnie z powiedzeniem "myśl globalnie, działaj lokalnie". Dawanie uczniom możliwości zdobycia doświadczenia, jak chociażby rozwiązywanie kwestii związanych ze zrównoważonym rozwojem obejmuje aspekty ekologiczne, społeczne i ekonomiczne. Ten proces uczy praktycznego podejścia i brania pod uwagę tych trzech perspektyw, ich wykorzystywania i stosowania wiedzy z nauk ścisłych, matematyki, ekonomii, geografii itp. w rozwiązywaniu problemów.
6. **Pluralizm** - ważne jest, aby zapewnić wiele różnych perspektyw w edukacji, wielość wymiarów, różnych poziomów geograficznych, a także różnych koncepcji wiedzy. Zrównoważony rozwój wiąże się z ustalaniem priorytetów, a pluralizm daje uczniom wgląd w różne poglądy i rozwiązania, co może zwiększyć ich zaangażowanie.
7. **Podejście do całej szkoły** - ważne jest, aby szkoła stała się przestrzenią nauki, w którym uczniowie i nauczyciele dokonują zrównoważonych wyborów w codziennym życiu. Daje to uczniom możliwość ćwiczenia swoich kompetencji w działaniu, co zostało wskazane jako jeden z celów w norweskim programie nauczania.

POLISH CURRICULUM

Cele Zrównoważonego Rozwoju są naturalnym sposobem wprowadzania globalnej świadomości do klasy . Aby osiągnąć CZR wszyscy musimy współpracować i szukać rozwiązań. Rola szkoły jest niezwykle ważna w osiągnięciu zrównoważonego rozwoju. W publikacji UNESCO (Education for Sustainable Development Goals Learning Objectives, 2017) czytamy, że

> „Aby stworzyć bardziej zrównoważony świat i zaangażować się w kwestie związane ze zrównoważonym rozwojem, jednostki muszą stać się twórcami zmian w zakresie zrównoważonego rozwoju. Wymagają wiedzy, umiejętności, wartości i postaw, które umożliwiają im przyczynianie się do zrównoważonego rozwoju"

W polskiej podstawie programowej kształcenia ogólnego można odnaleźć wiele zapisów pozwalających realizować zagadnienia związane z SDG. Dzięki temu poruszanie tych tematów nie wymaga dodatkowego nakładu pracy, a wspiera uczenie się poprzez pokazywanie wiedzy z różnych perspektyw. Niezwykle ważne jest interdyscyplinarne podejście do zagadnienia, co szczególnie łatwo udaje się uzyskać w pracy metodą projektu edukacyjnego. Ta metoda umożliwia wykorzystanie w praktyce wiedzy z równoczesnym rozwijaniem kluczowych umiejętności XXI wieku takich jak współpraca, kreatywność, komunikacja i krytyczne myślenie.

Cele i zadania zawarte w polskiej podstawie programowej pozwalają na rozwijanie kluczowych kompetencji dla zrównoważonego rozwoju w ramach wielu przedmiotów.
Realizacja treści zawartych w podstawie programowej języków obcych nowożytnych ma na celu skuteczne porozumiewanie się w mowie i piśmie, ale również kształtowanie postawy ciekawości, tolerancji i otwartości wobec innych kultur. „Znajomość języków obcych nowożytnych jest warunkiem pełnego, aktywnego uczestnictwa młodych Polaków w życiu społeczności europejskiej i globalnej”.

POLISH CURRICULUM

Sustainable Development Goals are a natural way to bring global awareness into the classroom. To achieve the SDGswe allneed to cooperate and look for solutions. The role of the school is extremely important in achieving sustainable development. A UNESCO publication (Education for Sustainable Development Goals Learning Objectives, 2017) states

> "To create a more sustainable world and engage in sustainable development issues, individuals must become sustainable change-makers. They require knowledge, skills, values, and attitudes that enable them to contribute to sustainable development"

In the Polish core curriculum for general education, many provisions can be found to implement SDG issues. Thus, addressing these topics does not require additional work, but supports learning by showing knowledge from different perspectives. Having an interdisciplinary approach to the issue is extremely important, which is particularly easy to achieve when working with the educational project method.This method makes it possible to put knowledge into practice while developing key 21st-centuryskills such as cooperation, creativity, communication and critical thinking.

The goals and tasks contained in the Polish core curriculum allow for the development of key competencies for sustainable development in many subjects. Implementation of the content of the modern foreign languages core curriculum is aimed at effective oral and written communication, but also at shaping an attitude of curiosity, tolerance, and openness towards other cultures. "Knowledge of modern foreign languages is a prerequisite for full, active participation of young Poles in the life of the European and global community."

POLISH CURRICULUM

CELE I TREŚCI

Cele i treści nauczania na **języku polskim** mają „szczególne znaczenie dla refleksji młodych ludzi zarówno nad kulturą współczesną, ale także nad kondycją człowieka we współczesnym świecie; nad istotnymi wyzwaniami świata, kultury, cywilizacji, jakim powinna stawiać czoła ludzkość.”
Na **geografii** czytamy„ Ważne jest, aby uczniowie zrozumieli sens i warunki realizacji zasad zrównoważonego rozwoju, m.in. poprzez poznawanie przykładów racjonalnego gospodarowania w środowisku, znaczenia planowania przestrzennego, poprawy jakości życia człowieka, poczucia odpowiedzialności za tworzenie ładu i piękna w miejscach swego zamieszkania.”
W wymaganiach dla przedmiotu **biologia** założono, że „Nauczanie biologii pozwala rozumieć znaczenie racjonalnego gospodarowania zasobami przyrody, reagowania na zmiany zachodzące w środowisku oraz ochrony różnorodności biologicznej jako wskaźnika zrównoważonego rozwoju.”
Z kolei na **fizyce** znajduje się zapis, że „Głównym celem nauczania fizyki jest dostarczenie narzędzi ułatwiających całościowe postrzeganie różnorodności i złożoności zjawisk otaczającego świata z punktu widzenia nauk przyrodniczych. Uczniowie kończący edukację w zakresie rozszerzonym powinni być przygotowani do funkcjonowania we współczesnym świecie. Należy podtrzymywać w nich ciekawość świata i kształtować umiejętność poszerzania wiedzy oraz krytycznego podejścia do informacji.”
Podczas realizacji podstawy programowej z **chemii** duży nacisk kładzie się na kształtowanie umiejętności rozumowania, dostrzegania zależności przyczynowo -skutkowych, wnioskowania, analizy i syntezy informacji.
Matematyka jest „nauką, która stanowi istotne wsparcie dla innych dziedzin, zwłaszcza dla nauk przyrodniczych i informatycznych. Rozumowanie matematyczne to umiejętność poszukiwania rozwiązania danego zagadnienia. Dobrze kształcona rozwija zdolność myślenia konstruktywnego, premiuje postępowanie nieschematyczne i twórcze. Dobre opanowanie umiejętności rozumowania matematycznego ułatwia w życiu codziennym odróżnianie prawdy od fałszu.”
Na **muzyce** uczniowie „zdobywają wiedzę o języku muzyki, twórcach i tworzywie muzycznym oraz instytucjach kultury. Wszystko to pozwala im na świadome uczestniczenie w życiu kulturalnym o zasięgu lokalnym i globalnym.”
W ramach lekcji **historii** absolwent powinien znać dzieje swojego państwa i narodu, a także orientował się w ważnych momentach historii powszechnej w wymiarze regionalnym, europejskim i globalnym.
Treści nauczania na przedmiocie **WOS** sformułowano tak, by uczeń miał świadomość własnego wpływu na życie publiczne, ale jednocześnie rozumiał konieczność brania odpowiedzialności za własne wybory i decyzje.
Kształcenia informatyczne ma na celu rozwój umiejętności kreatywnego rozwiązywaniu problemów z różnych dziedzin ze świadomym wykorzystaniem przy tym metod i narzędzi wywodzących się z informatyki.

POLISH CURRICULUM

GOALS AND CONTENT

The goals and content of teaching in the **Polish language** are "of particular importance for the reflection of young people both on contemporary culture, but also on the human condition in the modern world; on the significant challenges of the world, culture, civilization, which humanity should face."
In **geography**, we read: "It is important that students understand the meaning and conditions for the implementation of the principles of sustainable development, including by learning about examples of rational management in the environment, the importance of urban planning, improving the quality of human life, a sense of responsibility for creating order and beauty in the places of their residence."
In the requirements for the subject of **biology**, it is assumed that: "Teaching biology allows one to understand the importance of rational management of nature's resources, responding to changes in the environment and protecting biodiversity as an indicator of sustainable development."In physics, on the other hand, there is a provision that"
The main goal of teaching **physics** is to provide tools to facilitate a holistic perception of the diversity and complexity of the phenomena of the surrounding world from the point of view of natural science. Students completing extended education should be prepared to function in the modern world. Their curiosity about the world should be sustained and their ability to expand their knowledge and critically approach information should be formed."
During the implementation of the core curriculum in **chemistry**, great emphasis is placed on the formation of the skills of reasoning, perceiving cause-and-effect relationships, inference, analysis, and synthesis of information.
Mathematics is "a science that provides important support for other disciplines, especially for natural sciences and information technology. Mathematical reasoning is the ability to find a solution to a given problem. When well taught, it develops the ability to think constructively, and places a premium on proceeding non-schematically and creatively. A good mastery of mathematical reasoning skills makes it easier to distinguish truth from falsehood in everyday life.
In **music**, students "gain knowledge about the language of music, musical creators and creations, and cultural institutions. All this allows them to participate consciously in the cultural life of the local and global scope."
Within the framework of **history** lessons, the graduate should know the history of his state and nation and orient himself to important moments of universal history in regional, European and global dimensions.
The teaching content in the subject of **Citizenships** formulated so that the student is aware of his influence on public life, but at the same time understands the need to take responsibility for his own choices and decisions.
Computer science education is aimed at developing the ability to creatively solve problems in various fields with the conscious use of methods and tools derived from computer science.

POLISH CURRICULUM

Umieszczenie w podstawie programowej treści związanych z koncepcją zrównoważonego rozwoju pozwala nauczycielowi realizować niektóre jej założenia. Niestety w większości przypadków stanowi ona tylko dodatek do istniejącego programu nauczania. Poza tym w nauczyciele nie mają wystarczającej wiedzy na temat edukacji dla zrównoważonego rozwoju. Dlatego kluczowe znaczenie ma odpowiednie przygotowanie i wsparcie nauczycieli w rozwijaniu kompetencji niezbędnych do skutecznej realizacji tych zagadnień. Szczególnie ważna jest zmiana metod nauczania i podejścia pedagogicznego. Świadomy pedagog musi zdawać sobie sprawę, że zmienia się świat, sposób zdobywania wiedzy i dostępu do wiedzy. Dlatego istnieje potrzeba ciągłej weryfikacji swojego warsztatu pracy, wymiany doświadczeń, zdobywania nowej kompetencji.
Edukacja dla zrównoważonego rozwoju będzie efektywna wtedy gdy cała placówka stanie się miejscem zrównoważonego rozwoju, w którym stosuje się holistyczne podejście do edukacji w zakresie treści i efektów uczenia się, pedagogiki i środowiska uczenia się. Aby była efektywna muszą być stosowane aktywizujące metody nauczania skoncentrowane na uczniu, interdyscyplinarne podejście do problemu oraz samodzielne uczenie się i współpraca. Tylko takie podejście pozwoli na rozwijanie kompetencji i umiejętności, dzięki którym młody człowiek będzie podejmował mądre i odpowiedzialne działania na rzecz zrównoważonego rozwoju.

The inclusion of content related to the concept of sustainable development in the core curriculum allows the teacher to implement some of its foundations. Unfortunately, in most cases, it is only an addition to the existing curriculum. Besides, teachers do not have enough knowledge about education for sustainable development. Therefore, it is crucial to adequately prepare and support teachers in developing the competencies necessary for the effective implementation of these issues. It is especially important to change teaching methods and pedagogical approaches. A conscious educator must realize that the world, the way of acquiring knowledge, and access to knowledge are changing. Therefore, there is a need for constant revision of one's workbench, exchange of experience, and acquisition of new competence.

Education for sustainable development will be effective when the whole institution becomes a place of sustainable development, where a holistic approach to education is applied in terms of content and learning outcomes, pedagogy, and learning environment. For it to be effective, there must be student-centered active learning methods, an interdisciplinary approach to the problem, and self-directed learning and collaboration. Only such an approach will allow the development of competencies and skills that will enable a young person to take wise and responsible actions for sustainable development.

LEARNING SCENARIOS

W ramach projektu zebraliśmy 13 scenariuszy lekcji, wszystkie oparte na celach zrównoważonego rozwoju. Najpierw, w maju 2022 roku norwescy nauczycieleodwiedzili Polskę, przeprowadzili obserwacje oraz poprowadzili lekcje. Kilka miesięcy później, we wrześniu przyszła kolej na polskich nauczycieli. Celem tego projektu była promocja świadomości na temat globalnych problemów poprzez wdrażanie celów zrównoważonego rozwoju do programów nauczania przedmiotów.

As a part of the project, we have collected 13 lesson scenarios, all based on sustainable development goals. First, in May 2022 Norwegian teachers visited Poland, did job shadowing and conducted their lessons. Few months later, in September it was the Polish teachers' turn. The aim of this project was to spread awareness of global issues by implementing the SGDs in subject curriculums as a blueprint to achieve a better and more sustainable future for all and share our materials with other teachers. Therefore, each scenario is attached to this publication. We will be glad if you make good use of them and implement SDGs for your subject.

1 Spanish B

How to save the planet? Small steps on a daily basis – affirmative imperative.
Description: A lesson focused on small steps that each student can take every day to help protect the planet Earth. Giving advices in the second person singular of Affirmative Imperative.
SDGs: Good health and well-being, Responsible consumption and production, Climate action

2 English B

Renewable energy - how can we reduce our bills and be more eco-friendly?
Description: The lesson was designed for the teenagers who are competent in speaking, like debating and expressing their voice. In order to make them acquainted with the topic more deeply two listenings were presented. They included interesting ideas and advanced phrases and words which stimulated not only the listening skills, but also using more sophisticated and adequate vocabulary.
SDGs: Affordable and clean energy, Responsible consumption and production, Climate action

3 English B

Sustainable Cities and Communities.
Description: Students debate how sustainable cities and communities can ensure that citizens have a decent quality of life without harming the environment.
SDGs: Sustainable Cities and Communities

1

Hiszpański B

Jak uratować planetę? Małe kroki na co dzień -imperatyw afirmacyjny

Opis: lekcja skupiona na metodzie małych kroków, które każdy uczeń może wdrożyć każdego dnia, aby pomóc chronić planetę Ziemię. Udzielanie rad w drugiej osobie liczby pojedynczej w imperatywie afirmacyjnym.

SDGs: Dobre zdrowie i dobre samopoczucie, Odpowiedzialna konsumpcja i produkcja, Działania na rzecz klimatu.

2

Angielski B

Energia odnawialna -jak możemy zmniejszyć nasze rachunki i być bardziej eko?

Opis: lekcja przeznaczona dla nastolatków, którzy lubią dyskutować i wyrażać opinie.W celu głębszego zapoznania ich z tematem zaprezentowano dwie krótkie prezentacje zawierające ciekawe pomysły oraz zaawansowane zwroty i słowa, które stymulowały nie tylko umiejętność słuchania, ale kompetencje leksykalne.

SDGs: Oszczędzanie, Czysta energia, Odpowiedzialna konsumpcja, Działania na rzecz klimatu

3

Angielski B

Zrównoważone miasta I społeczności

Opis: Uczniowie debatują, w jaki sposób zrównoważone miasta i społeczności mogą zapewnić obywatelom przyzwoitą jakość życia bez szkody dla środowiska.

SDGs: Zrównoważone miasta i społeczności

4 Science and English

Local challenges – sustainability and beyond!
Description: Local climate challenges.
SDGs: Sustainable cities and communities, Climate action, Life below water, Life on land

5 Physics

Energy sources.
Description: The lesson will bring up the very important topic of energy production. Students will learn how energy sources can be classified. Also, the physical quantities, concerning the comparison of the effectiveness of each energy source will be introduced. Finally, students will work on how to represent and analyze energy flow using Sankey diagrams.
SDGs: Affordable and clean energy, Industry, innovation and infrastructure, Responsible consumption and production

6 Psychology

Fostering moral & democratic competence with Konstanz Method of Dilemma Discussion (KMDD®)
Description: KMDD® is a method of fostering moral and democratic competence. It is grounded on an assumption that democracy may only arise from people being morally competent (e.g. equipped with abilities to discuss with each other without deceit, humiliation, or other forms of communicational violence). KMDD® is aimed at promoting communication that is based on the assessment of the internal quality of arguments not whether the arguments are “better” just because they are “ours”. KMDD® is a practical way of exercising a democratic and highly moral way of building communication between people no matter regardless of their skin color, faith, or any other background.
SDGs: Quality education, Gender equality

4

Nauka i angielski

Lokalne wyzwania - zrównoważony rozwój i nie tylko!
Opis: Lokalne wyzwania związane z klimatem.
SDGs: Zrównoważone miasta i społeczności, Działania na rzecz klimatu, Życie pod wodą, Życie na lądzie

5

Fizyka

Źródła energii.
Opis: na lekcji poruszony zostanie bardzo ważny temat pozyskiwania energii. Uczniowie dowiedzą się, jak można sklasyfikować źródła energii. Wprowadzone zostaną również wielkości fizyczne, dotyczące porównania efektywności każdego źródła energii. Na koniec uczniowie będą pracować nad tym, jak przedstawiać i analizować przepływ energii za pomocą diagramów Sankeya.
SDGs: Czysta energia, Przemysł, Innowacje i infrastruktura, Odpowiedzialna konsumpcja i produkcja

6

Psychologia

wspieranie kompetencji moralnych i demokratycznych za pomocą Konstanz Method of Dilemma Discussion (KMDD)
Opis: KMDD to metoda wspierania kompetencji moralnych i demokratycznych. Opiera się ona na założeniu, że demokracja może powstać tylko wtedy, gdy ludzie są moralnie kompetentni (np. wyposażeni w umiejętność dyskutowania ze sobą bez oszustw, upokorzeń i innych formprzemocy komunikacyjnej). KMDD ma na celu promowanie komunikacji, która opiera się na ocenie wewnętrznej jakości argumentów, a nie tego, czy argumenty są "lepsze" tylko dlatego, że są "nasze". KMDD to praktyczny sposób na demokratyczny i wysoce moralny sposób budowania komunikacji między ludźmi bez względu na ich kolor skóry, wiarę czy jakiekolwiek inne pochodzenie.
SDGs: Jakość edukacji, Równość płci

7 Chemistry

Acid bases titration as an analytical method in chemistry.
Description: The student learns the method of calculating the acid / base concentration by titration, using as an example the titration of acetic acid in vinegar. The student is able to plan an experiment determined by dependent, independent and controlled variables.
SDGs: Zero hunger, Quality education, Clean water and sanitation

8 Visual Arts

Clothes without compromising. About sustainable fashion.
Description: During the lesson we want to answer the question: what is fast fashion? The students learn the basic vocabulary of sustainable clothing production and the negative effects of introducing the fast fashion model. Learn the history of the greatest tragedy in clothing production, the collapse of Rana Plaza in Bangladesh. They will consider the effects of over-producing and buying clothes and during the workshops they will create new version of old clothes.
SDGs: Industry, innovation and infrastructure, Responsible consumption and production

9 The basics of entrepreneurship

Virtual business - real competences.
Description: Students run virtual companies and make realistic business decisions in virtual reality.
SDGs: Quality education, Decent work and economic growth, Industry, innovation and infrastructure, Partnerships for the goals

7

Chemia

Miareczkowanie zasad kwasowych jako metoda analityczna w chemii.
Opis: student poznaje metodę obliczania stężenia kwasu/zasady metodą miareczkowania, na przykładzie miareczkowania kwasu octowego w occie. Potrafi zaplanować eksperyment określony przez zmienne zależne, niezależne i kontrolowane.
SDGs: Nie dla głodu, Edukacja wysokiej jakości, Czysta woda i warunki sanitarne

8

Sztuki wizualne

Ubrania bez kompromisów. O zrównoważonej modzie.
Opis: podczas lekcji chcemy odpowiedzieć na pytanie: czym jest fast fashion?Uczniowie poznają podstawowe słownictwo dotyczące zrównoważonej produkcji odzieży oraz negatywne skutki wprowadzenia modelu fast fashion. Poznają historię największej tragedii w produkcji odzieży - upadku Rana Plaza w Bangladeszu. Zastanowią się nad skutkami nadprodukcji i kupowania ubrań, a podczas warsztatów stworzą nową wersję starych ubrań.
SDGs: Przemysł, Innowacje i infrastruktura, Odpowiedzialna konsumpcja i produkcja

9

Podstawy przedsiębiorczości

Wirtualny biznes - realne kompetencje.
Opis: uczniowie prowadzą wirtualne firmy i podejmują decyzje biznesowe w wirtualnej rzeczywistości.
SDGs: Edukacja wysokiej jakości, Godna praca i wzrost gospodarczy, Przemysł, innowacje i infrastruktura, Partnerstwo

10

History

The bombing of Kristiansund.

Description: The development of Kristiansund during and after the Second World War. How Kristiansund was bombed during the Second World War, and how they rebuilt the town in the peacetime after the war.

SDGs: Peace, justice and strong institutions

11

History

How history can teach us about sustainable development.

Description: How The Industrial Revolution gave humans great possibilities to develop, but at the same time that it came with a cost that we are paying today and will for a long time in the future.

SDGs: Sustainable cities and communities, Life below water, Life on land

12

Math

Figure numbers.

Description: The students will be introduced to a mathematical problem, which they have to discuss and solve together. They need skills to discuss, think critically and cooperate to solve the problem. In the end – every group shares what they have found out in class, and argue for their way of thinking.

SDGs: Quality education

10

Historia

Bombardowanie Kristiansund
Opis: rozwój Kristiansund podczas II wojny światowej oraz w okresie powojennym. Jak Kristiansund zostało zbombardowane podczas II wojny światowej i jak zostało odbudowane?
SDGs: Pokój, sprawiedliwość i silne instytucje

11

Historia

Jak historia uczy zasad zrównoważonego rozwoju?
Opis: Rewolucja Przemysłowa – szansa czy zagrożenie? Omówimy zyskane korzyści oraz ponoszone koszty – obecne i przyszłe.
SDGs: Zrównoważone miasta i społeczności; Życie pod wodą; Życie na lądzie

12

Matematyka

dowodzenie
Opis: uczniom zostanie zaprezentowany problem matematyczny, który muszą przedyskutować i wspólnie rozwiązać. W tym celu potrzebują umiejętności dyskusji, krytycznego myślenia i współpracy. Na koniec - każda grupa dzieli się tym, czego dowiedziała się na zajęciach i argumentuje swój sposób myślenia.
SDGs: Jakość edukacji

13 Economics

The role of SMEs in fulfilling the SDGs in developing countries.

Description: Understanding the differences between economic growth and development and links to long-term improvements in broad measures of income per capita, education and health care, and reduction of extreme poverty and inequality as a process that opens up new business opportunities for the SMEs.

SDGs: Decent work and economic growth, Reduced inequalities

13

Ekonomia

Rola małych i średnich przedsiębiorstw w realizacji celów zrównoważonego rozwoju w krajach rozwijających się.

Opis: Zrozumienie różnic między wzrostem gospodarczym a rozwojem oraz powiązaniami z długoterminową poprawą ogólnych wskaźników PKB, edukacji i opieki zdrowotnej oraz redukcji skrajnego ubóstwa i nierówności jako procesu stwarzającego możliwości biznesowe dla MŚP.

SDGs: Wzrost gospodarczy i godna praca, Mniej nierówności

Spanish B

Title: How to save the planet? Small steps on a daily basis – affirmative imperative.
Author(s), Name of school: Katarzyna Oziębła, Kolegium Europejskie – Europejskie Niepubliczne Liceum Ogólnokształcące w Krakowie
Summary: The lesson focused on small steps that each student can take every day to help protecting the planet Earth. Giving advices in second person singular of Affirmative Imperative.
SDGS: 3. Good health and well-being, 12. Responsible consumption and production, 13. Climate action
Subject: Foreign Language – Spanish
Topic: Saving the planet by ecological and healthy lifestyle.
Integration into the curriculum: Affirmative Imperative in 2nd person singular. Elementary Spanish, stage of education III.2.0. / III.2.
Aim of the lesson: Learn new vocabulary related to the ecology, practice grammar construction – Afirmative Imperative (second person singular), expand awareness of the importance of taking care of the planet Earth.
Age of students: 16/17 years old
Preparation time: 120 min
Teaching time: 45 min
Teaching materials and tools:
Online:

- Canva presentation: https://www.canva.com/design/DAFM-8Lz43w/qgRefztT6H0eRu9KHOrYIA/view?utm_content=DAFM-8Lz43w&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton
- Kahoot: https://create.kahoot.it/share/cuidar-el-planeta-imperativo-afirmativo-tu/e1005a25-622a-4202-9156-ebe09bd04fcb
- Mentimeter: https://www.menti.com/aldv29rsddtk

Offline:

- Flashcards

21st century skills
KEY SUBJECTS & 21ST CENTURY THEMES: Global awareness, health and environmental literacy.
LEARNING & INNOVATION SKILLS: Critical thinking and problem solving, communication.
INFORMATION, MEDIA & TECHNOLOGY SKILLS: ICT literacy.

Activities

Name of activity	Procedure	Time
Let's get to know each other	Teacher and students present themselves in Spanish to warm up and get to know each other.	5 minutes
Warm up	Quick review on numbers and the present tense – regular and irregular verb conjugation.	10 minutes
Introduction to the topic	Students deduce the topic by looking at the hint slide	2 minutes
Vocabulary	Students are given specific graphics and try to guess the vocabulary. After a while teacher gives the rest of the new remaining words.	5 minutes
Grammar	Affirmative Imperative in 2nd person singular.	5 minutes
Practice	Grammar exercise that students do on their own with teacher's help.	10 minutes
Quiz	Kahoot!	5 minutes
Summary	Mentimeter	3 minutes
Total		**45 minutes**

Assessment

Diagnostic assessment: classroom discussion on the vocabulary.
Formative assessment: progress report, virtual classroom tools like Kahoot! or Mentimeter.

English B

Title: Renewable energy – how can we reduce our bills and be more eco-friendly?
Author(s), Name of school: Małgorzata Michalska, Kolegium Europejskie – The College of Europe
Summary: The lesson was designed for the teenagers who are competent in speaking, like debating and expressing their voice. In order to make them acquianted with the topic more deeply two listenings were presented. They included interesting ideas and advanced phrases and words which stimulated not only the listening skills, but also using more sophisticated and adequate vocabulary.
SDGS: affordable and clean energy (goal 7); responsible consumption and production (goal 12); climate action (goal 13)
Subject: English, Economy, Business, Psychology
Topic: Renewable energy – how can we reduce our bills and be more eco-friendly?
Integration into the curriculum: The lesson is perfectly integrated with Polish national curriculum – both to English and Biology one as it covers the topic of alternative sources which is present in the programme. The mechanisms of the sources in question and the competences as learning a proper vocabulary, speaking about the environment and debating may refer, as said, to English and Biology material.
Aim of the lesson
– spread the awareness of SDGs
– students will learn new vocabulary regarding renewable energy sources
– student will prepare z plan of eco campaign in their town
– student will learn rhetorical tools useful when convincing individuals to be more eco-friendly
– student will reflect on how much their household spends on the energy
Age of students: 16 years old
Time
Preparation time: 360 min.
Teaching time: 90 min.
Teaching materials and tools
Online: TedTalk, Youtube, Padlet
21st century skills
COLLABORATION – the plan contains pair and group work
COMMUNICATION – the plan by relating to language competences and concepts underlines the importance of proper, precise communication

CRITICAL THINKING – by analyzing the ideas appearing both in the listenings and in the class the students are urged to formulate their own stance
CREATIVITY – the lesson plan includes the production stage which calls for innovation when it comes to providing the arguments and visual plan of the campaign.

Activities

Name of activity	Procedure	Time
Brainstorm	Teacher and students present themselves in Spanish to warm up and get to know each other.	5 minutes
Discussion	What solutions need to be implemented? Group-work Which method is the cheapest/the easiest?	10 minutes
Riddle	After watching a short commercial the pupils need to present their ideas on the concept – both literal and metaphorical.	10 minutes
Vocabulary exercise: gap filling, connecting phrases	The exercise regards the professional structure and words concerning listening and the words needed for the discussion.	15 minutes
Preparing an Eco Campaign	How to persuade your town to use less energy? (tool: Padlet)	15 minutes

Assessment

The assessment process includes:
– providing feedback during all activities;
– making sure that the vocabulary is used properly;
– monitoring students' progress at all times;
– preparing the last task which checks how much the students have learned.

English B

Title: Sustainable Cities and Communities
Author(s), Name of school: Elisabeth Folland Dahl, Atlanten videregående
SDGS goal nr.11: Sustainable Cities and Communities
Subject: English
Topic: How can sustainable cities and communities ensure that citizens have a decent quality of life without harming the environment?
Integration into the curriculum
The Curriculum in English in Norway state in its central values that, “English is an important subject when it comes to cultural understanding, communication, all-round development and identity development. The subject shall give the pupils the foundation for communicating with others, both locally and globally, regardless of cultural and linguistic background. English shall help the pupils to develop an intercultural understanding of different ways of living, ways of thinking and communication patterns” (The Norwegian Directorate for Education and Training, 2020). Furthermore, it is stated “The subject shall develop the pupils’ understanding that their views of the world are culture-dependent. This can open for new ways to interpret the world, promote curiosity and engagement and help to prevent prejudice.
In the competence aims for VG1 general studies (after the first year in upper secondary school), two aims focus on that the pupils should be able to (https://www.udir.no/lk20/eng01-04/kompetansemaal-og-vurdering/kv6?lang=eng):

- “read and compare different factual texts on the same topic from different sources and critically assess the reliability of the sources”
- “use different sources in a critical, appropriate and accountable manner”

Aim of the lesson: Have the students reflect on what we can do as individuals and as communities to reduce urban energy consumption and carbon emission as rapid urbanization puts pressure on water supplies, living conditions, and public health.
Age of students: 16
Time: Teaching time: 45 min.
Teaching materials and tools
PowerPoint presentation, classroom discussion about SDG goal nr 11: Sustainable cities and communities.
21st century skills: English is an important subject in the 21st century as the subject shall build the foundation for pupils to see their own identity and others’ identities in a multilingual and multicultural context.

Activities

Name of activity	Procedure	Time
Introduction to topic	Teacher	5 minutes
Why is a sustainable city important for me as a citizen?	Discuss with a fellow student Classroom discussion	2 minutes 10 minutes
What does the city of Cracow do to be a sustainable city?	Discuss in groups Classroom discussion	5 minutes 10 minutes

Assessment

Oral skills and participation in group and classroom discussions. Assessing how the students present information, reflect and adapt language suitable to the purpose, the receiver and context.

Science and english

Title: Local challenges – sustainability and beyond!
Author(s), Name of school: Teachers of Science and English – Atlanten videregående skole
SDGs no. 11, 13, 14, 15
Subject: Science and English
Topic: Local climate challenges
Integration into the curriculum
The national curriculum in Science says:

- Students will explore a natural science problem of their own choosing, present findings and argue for the choice of methods

The national curriculum I English says:

- use appropriate digital resources and other aids in language learning, text creation and interaction
- understand and use academic language when working with their own oral and written texts
- express themselves nuanced and precise with flow and coherence, idiomatic expressions and varied sentence structures adapted to purpose, receiver and situation
- use different sources in a critical, appropriate and accountable manner
- write different types of formal and informal texts, including complex ones, with structure and context that describes, discusses, justifies and reflects the intended purpose, recipient and situation

Aim of the lesson: Optional product presented in English (PowerPoint, podcast, movie, academic text etc.)
Age of students: 16-17
Time: Preparation time: 8 x 45 minutes
Teaching time: 23 x 45 minutes
Teaching materials and tools
Online:

- UN Sustainable Development Goals (film to get to know the SDGs)
- Sustainability Library

Offline:

- Any form of digital presentation tool.
- Textbook in subjects.

21st century skills

Collaboration and communication, critical thinking, creativity.

Activities

Name of activity	Procedure	Time
Start-up	Science teacher presents the task	1 lesson
Work in groups	Science teacher helps to find a local challenge. Groups of 3 students start to collect material.	10 lessons
Work in groups	English teacher helps the groups with structure and language (English)	10 lessons
Presentation	Science and English teacher see/listen to the product.	2 lessons

Assessment

The assessment method of the lessons: Observation during the period, the presentation at the end.

- All students have a log. This is created as an assignment in the class team. The contact teacher invites the science and English teachers.
- All groups receive a document that they must complete and must be approved by the teacher.
- The groups agree on how to work together/share expectations.
- It is desirable that both teachers are together if oral presentations.

Physics

Title: Energy sources.
Author(s), Name of school: Małgorzata Walczak, Kolegium Europejskie - Europejskie Niepubliczne Liceum Ogólnokształcące in Kraków, Poland.
Summary: The lesson will bring up the very important topic of energy production. Students will learn how energy sources can be classified. Also, the physical quantities, concerning the comparison of the effectiveness of each energy source will be introduced. Finally, students will work on how to represent and analyze energy flow using Sankey diagrams.
SDGS: Goal 7 - affordable and clean energy, Goal 9 - industry, innovation and infrastructure, Goal 12 - responsible consumption and production
Subject: Physics
Topic: Energy production.
The topic: Energy production is planned for the 2nd year of the IB Diploma Programme, so for students aged 18-19.
Aim of the lesson
I would like to achieve with students the following:

- Describing the differences between primary- secondary, and renewable- non-renewable energy sources, including a discussion of the examples.
- Solving problems relevant to specific energy and energy density.
- Sketching and interpreting Sankey diagrams.
- Analyzing (in general) the Sankey diagrams for entire countries.

Age of students: 18-19 years old
Time: Preparation time: 1 hour
Teaching time: 45 minutes
Teaching materials and tools
Online: https://www.iea.org/sankey/#?c=World&s=Balance, Ppt presentation.
Offline: Squared paper, ruler, calculator.
21st century skills
At the beginning of the lesson, students will participate in brainstorming (communication skills). Then, they are going to work in groups, enhancing their collaboration and presentation skills. During tasks related to Sankey diagrams, students will prove their creativity and critical thinking. The final task, regarding analysis of real-life examples (Sankey diagram for Norway and Poland for 2019 energy balance) will strengthen the practical skills.

Activities

Name of activity	Procedure	Time
Primary and secondary energy sources	Brainstorming and discussion- as a result students distinguish between primary and secondary energy sources. Examples for each group are listed.	5 min.
Renewable and non-renewable energy sources	Brainstorming and discussion- as a result students define renewable and non-renewable energy sources. Examples for each group are discussed.	3 min.
Electricity as a secondary and versatile form of energy	The teacher explains the general scheme of the electric power station.	2 min.
Specific energy and energy density of the fuel sources	Teacher introduces terms: specific energy and energy density. Two examples are solved.	15 min.
Sankey diagrams	Students draw a Sankey diagram for 2 examples (work in group).	15 min.
Sankey diagrams for Norway and for Poland	Students using the webpage of the International Energy Agency analyze the Sankey diagrams for Norway and Poland in the year 2019.	5 min.

Assessment

The assessment of the lesson will be done during the discussion with students and visiting teachers after the lesson.

References

1. IB DP syllabus
2. D. Homer, M. Bowen-Jones, Physics Course Companion, 2014 edition, Oxford University Press 2014.

Psychology

Title: Fostering moral & democratic competence with Konstanz Method of Dilemma Discussion (KMDD®)
Author(s), Name of school: Małgorzata Steć, Kolegium Europejskie
Summary: KMDD® is a method of fostering moral and democratic competence. It is grounded on an assumption that democracy may only arise from people being morally competent (e.g. equipped with abilities to discuss with each other without deceit, humiliation, or other forms of communicational violence). KMDD® is aimed at promoting communication that is based on the assessment of the internal quality of arguments not whether the arguments are “better” just because they are “ours”. KMDD® is a practical way of exercising a democratic and highly moral way of building communication between people no matter regardless of their skin color, faith, or any other background.
SDGS: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Subject: Psychology and other social sciences, Languages, Ethics
Topic: For example LGBT multiple problems (acceptance, tolerance)
Integration into the curriculum. The topic is connected e.g. to a section of the sociocultural approach to understanding behavior in psychology IB DP®. It addresses many problems that are recognizable from the perspective of cultural background and social life. It can be used to introduce the concept of strategies for cultural changes (Berry, 2008).
Aim of the lesson: I would like to teach students how democracy really works in the discursive context of a moral dilemma discussion and how this may contribute to building a better understanding and opinion-sharing based on mutual respect and appreciation.
Age of students: 16-18
Time: Preparation time: 60 minutes
Teaching time: 90 minutes
Teaching materials and tools
Offline: Blackboard or whiteboard, markers, printed history (the one to be discussed), tables, chairs, something to write for participants (e.g. pens, pencils)

21st century skills

- collaboration and communication (respectful exchange of arguments and discussing an issuing matter)
- critical thinking (creation of the best arguments possible; current adaptation to changes and responding to arguments)
- creativity (responding to new arguments, changing mind, being able to see something from different angles)

Activities

Name of activity	Procedure	Time
Presentation of a story	The story about a person making a herd decision is presented orally with dramatization; participants must be fully focused on the story; the teacher must present the story as if it was something important and very engaging, with emotional involvement	5 minutes
Self-assessment	Students receive a printed version of the story; they are encouraged to write down their thoughts and rate how the decision was hard for the protagonist (scale from -5 to +5)	5 minutes
Clarification	Questions to all students? Do they see any problem in the story	10 minutes
First voting	Who is for the decision of the protagonist was right/not right – division into 2 groups [undecided students are asked to observe and make notes; one person is about to write down an argument on the board while other students will discuss the matter]	5 minutes
Arguments	Students work in sub-groups of 3 or 4 on collecting as many as good arguments as they can for their decision	10 minutes
Discussion	Students in both groups must sit in two rows (vis a vis); the teacher is instructing them about two rules: no ad personam arguments and the ping-pong rule of responding: the person willing to say their argument must raise a hand; the voice is given by the last person speaking from the opposite group – the teacher interrupts only if a rule is violated by saying “rule nr 1” or “ping pong”	30 minutes
Best counterargument #1	Nomination of the best counterarguments of both sides. Students of one group nominate one or more arguments of their opponents as the best argument/s. They use arguments written on the board during the discussion.	5 minutes
Best counterarguments #2	Best counterarguments are stated by each group to the opposite group to underline the quality of the opponent’s way of thinking and arguing.	5 minutes
Final voting	Asking if anyone changed their mind	5 minutes
A round	Ask each participant: what have you learned? Did you have fun?	10 minutes

Assessment

Non-formal: A round

Formal: MCT (Moral competence test®) – pre- and posttest – comparison of results.

Chemistry

Title: Acid bases titration as an analytical method in chemistry.
Author(s), Name of school: mgr Karolina Gawlak, Kolegium Europejskie Kraków
Summary: The student learns the method of calculating the acid / base concentration by titration, using as an example the titration of acetic acid in vinegar. The student is able to plan an experiment determined by dependent, independent and controlled variables.
SDGS: 2. Zero hunger, 4. Quality Education, 6. Clean water and Sanitation
Subject: Chemistry
Topic: Measurement and data processing.
Integration into the curriculum
The topic is strictly linked with IB Chemistry curriculum. The titration method is one of the analytical method, which student can use in yours Internal Assessment. Aim of the lesson: The aim of the lesson will be understanding of scientific method and ability to plan the experiment. The student should be able to describe the independent, dependent and control variables and provide basic calculations of final value.
Age of students: 18
Time: Preparation time: 180 min
Teaching time: 90 min
Teaching materials and tools
Online: Kahoot, youtube
Offline: Laboratory glass (biurets, conical flask, volumetric flack, pipette, stand)
21st century skills

- collaboration and communication – after group working
- critical thinking – after selfchecking of exercises and discussion

Activities

Name of activity	Procedure	Time
Organization of the lesson	Welcoming, checking the list ect.	5 min
Review.	Worksheet about balancing of neutralization process.	10 min
Review.	In groups student should prepare exercises based on one of the chemical equation from worksheet 1. It'll be reacting masses and volumes exercises.	15 min
Brainstorming and discussion	Discussion about essential of measuring of concentration of substance in food product.	10 min
Investigation	Naming of necessary laboratory glass and describing of their function.	15 min.
Video	Real example of titration method	10 min
Brainstorming and discussion	The indicator – role in titration process	5 min
Analysis	Analysis of the instruction of titration method on case of titration of ethanoic acid in various type of vinegar. Describing of the variables.	15 min
Evaluation	Describing form of preparing for next lesson, which will be proposal of titration experiment.	5 min

Assessment

1. Revision part – exercises prepared and checked by student.
2. Main body – note about analysis of titration experiment, describing of variables.
3. Evaluation – exercises, proposal about real titration experiment. The experiment will be conducted on next lesson, which give the chance for evaluation in real experience.

Visual Arts

Title: Clothes without compromising. About sustainable fashion.
Author(s), Name of school: Katarzyna Grudniewska, Kolegium Europejskie, Cracow
Summary: During the lesson we want to answer the question what is fast fashion. The students learn the basic vocabulary of sustainable clothing production and the negative effects of introducing the fast fashion model. Learn the history of the greatest tragedy in clothing production, collapse Rana Plaza in Bangladesh. They will consider the effects of over-producing and buying clothes and during the workshops they will create new version of old clothes.
SDGS: 9. Industry, innovation and infrastructure, 12. Responsible consumption and production
Subject: Visual Arts
Topic: Sustainable clothing production. Fast fashion. Alternatives to fast fashion.
Integration into the curriculum: While working on the Process Portfolio project IB1 students learn techniques for designing clothes. The topic of the lesson can be associated with this section.
Aim of the lesson: 1.To raise awareness of sustainability issues. 2.To review and learn vocabulary related to fast fashion. 3.To learning about business model of large clothing companies and their impact on purchasing decision. 4.Students are getting more worried about the effects of fast fashion on the environment. 5.Capacities for thinking and acting in ways that are necessary to create a more sustainable future. 6.To promote reflecting processes and design action that will lead to a more equitable and sustainable future
Age of students: 15-17 years old
Time: Preparation time: 60 minutes
Teaching time: 90 minutes + 60 minutes: workshops
Teaching materials and tools:
Online: 1.Video: Rana Plaza Collapse Documentary: the deadly cost of fashion: https://www.youtube.com/watch?v=9Fkhzdc4ybw
2.Video: VAUDE – Clothing production in Asia: fair and responsible: https://www.youtube.com/watch?v=lHIdtZ6jA2s
3.Article: Building collapse in Bangladesh leaves score dead (New York Times): https://www.nytimes.com/2013/04/25/world/asia/bangladesh-building-collapse.html
4. Worksheet 1: https://www.teachingenglish.org.uk/sites/teacheng/files/Fast_fashion_student_worksheet_F2F.pdf

5.Infographic. Fast fashion in numbers: https://www.teachingenglish.org.uk/sites/teacheng/files/infographic_portrait_worksheet_answers.pdf
Offline: 1. Definition of FAST FASHION on small papers (one per student): Fast fashion is inexpensive clothing produced rapidly by mass-market retailers in response to the latest trends. (Oxford Dictionary) 2.Sheet of paper a1 format, glue, scissors, markers, fast fashion brands logos, colored paper 3.Sewing machine, fabrics, scissors, threads, patches
21st century skills: This lesson promote creativity and collaborative skills. Develop reading, speaking and visual literacy skills.Very important is critical thinking and problem solving, communication.

Activities

Name of activity	Procedure	Time
Reading the text	Article from New York Times about collapse garment factory Rana Plaza in Bangladesh in 2013 where 1134 people died.	9 minute
Discussion	Topic: Rana Plaza - a symbol of global inequality.	10 minutes
Video	Video: Rana Plaza collapse documentary. The cost of fashion https://www.youtube.com/watch?v=9Fkhzdc4ybw	6 minutes
Brainstorming	On the board: FAST FASHION. What Fast Fashion means?	5 minutes
Vocabulary	Matching activity. Learners to look at their worksheet (source: Worksheet 1) and have time to do matching activity individually.	10 minutes
Investigation	Where can you buy fast fashion? What kinds of people buy fast fashion? Why? Which brands produce fast fashion? What the fast fashion business model looks like?	10 minutes
Conclusion	Is fair and responsible production possible?	5 minutes
Poster	Using the sentences from brainstorming students try to make poster: Against Fast Fashion. What can we do? (in groups)	20 minutes
Presentation	Make an exhibition and presentation.	12 minutes
Video	Video: VAUDE. Clothing production in Asia. https://www.youtube.com/watch?v=lHIdtZ6jA2s	8 minutes
Workshops	Customizing clothes from hidden treasures.	60 minutes

Assessment
Presentation of posters created over the lesson and a short presentation of the content behind the visual form. Show of customizing clothes made during the workshops.

The basics of entrepreneurship

Title: Virtual business – real competences.
Author(s), Name of school: Krzysztof Ciurka, Kolegium Europejskie w Krakowie
Summary: Students run virtual companies and make realistic business decisions in virtual reality
SDGS: 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.
Subject: The basics of entrepreneurship, Business management, Economics, English, Maths
Topic: Business plan
Integration into the curriculum: Business simulations will be a practical form of preparation for running a business in the future.
Aim of the lesson: Main: Showing the school as a place where learning takes place in a practical way, projects aimed at shaping the competences of the future are implemented, emphasis is placed on the use of innovative information and communication techniques. Detailed: showing the basics of running your own business, showing the process of preparing for starting a company, presenting the cause-and-effect relationship between the decisions made and the results obtained, shaping the skills: logical and strategic thinking, problem solving, cooperation in a group, making decisions under time pressure, drawing conclusions from market feedback.
Age of students: 15-19 years old
Time: Preparation time: 30 minutes, Teaching time: 150 minutes
Teaching materials and tools:
Online: https://www.revas.online/en/
- Student registration - https://www.youtube.com/watch?v=9lsiKfafQrI
- Round 1 - https://www.youtube.com/watch?v=0i1VljJUu4M
- Round 2 - https://www.youtube.com/watch?v=ZREX_FYWsYA
- Round 2 analysis - https://www.youtube.com/watch?v=ENuqkxn2Xkk
- Round 3 - https://www.youtube.com/watch?v=K6mLFdONowc
- Round 4 - https://www.youtube.com/watch?v=jFNsQtlIlJQ
- Manual guide - https://gry.revas.pl/doc-preview.php?id=4&ver=basic&lang=en-GB

21st century skills: Workshops with simulations create space for critical thinking, collaboration, communication and creativity - Education Alliance Finland | Global Quality Standard for Learning Solutions.
Key skills: Entrepreneurship; taking the initiative; search, selection, critical analysis of market information; Troubleshooting; cooperation in a group; logical thinking skills; application of mathematical knowledge in business practice; competences in the field of IT; social and civic competences.
Activities: The project provides for conducting workshops with the use of business simulations. It is recommended that the recipients of the workshops are students of faculties related to business, management and economics. As part of the workshops, students become owners of virtual companies. Students work in groups of 2-3 people and compete with other teams in one virtual market. During the game, players make realistic business decisions in virtual reality. Decision-making scope: organization of the company, creating an offer, employment of employees, management of infrastructure and the process of providing a service, procurement, sales, marketing, finance, etc. After each decision round, the results of the actions taken are analyzed. Students have the opportunity to draw conclusions from the decisions made and on their basis make better and better business decisions. Full-size simulation covers max. 12 stages (12 virtual months). Depending on the time reserved for gamification - the number of decision-making rounds held at school may vary.
In order for the project to be qualitative in class, it should be carried out min. 2 decision rounds with the analysis of the results (approx. 4 lesson hours). It is recommended that the stationary project should include min. 4 decision rounds (approx. 7-8 teaching hours). Then the project can be continued in a remote formula - simulations have a full substantive foundation (manuals in pdf form, tutorials in the form of instructional videos on yt). Consolidation of the project results may take the form of organizing a competition for students from partner schools on the basis of business simulation. The competition should be remote, it should consist of 6-8 decision rounds, the simulations should be in English, the time for one decision round should be several days, the schedule of the decision rounds should be prepared and communicated to the participants in advance, the participants of the competition should be 3-4 student teams (each team of 3 people) from each school, teams should compete for the title of "Best Managed Virtual International Enterprise"

Detailed course:
1. Dividing the class into several groups of 2-3 people
2. Registration of students for simulation
3. Handover of license keys
4. Discussion of the decisions in round 1
5. Students making decisions in round 1
6. Break
7. Discussion of the results of round 1
8. Discussion of decisions in round 2
9. Students making decisions in round 2
10. Break
11. Discussion of the results of round 2
12. Discussion of the decisions in round 3
13. Making decisions in round 3 by students
14. Break
15. Discussion of the results of the round ...
16. Discussion of decisions in the round of ...
17. Making decisions in the round ... by students
18. Break

Assessment
questionnaire
More information about Revas Business Simulation Games:
https://www.revas.online/en/economic-games-at-school-benefits/
https://www.revas.online/en/revas-certificate-eaf/

History

Title: The bombing of Kristiansund
Author(s), Name of school: Eskild Bunes, Bjørn Enaasen
SDGs no. 16.
Subject: History
Topic: The development of Kristiansund during and after the Second World War.
Integration into the curriculum: The national curriculum in History says: The pupils will discuss the background to the world wars and a selection of other key wars or conflicts, and reflect on whether peace settlements have contributed to peace and reconciliation.
Aim of the lesson: I would like my students to achieve knowledge of how Kristiansund was bombed during the Second World War, and how they rebuilt the town in the peacetime after the war.
Age of students: 18-19
Time: Preparation time: 3 x 45 minutes
Teaching time: 2 lessons
Teaching materials and tools
Online: Websites with pictures
Offline: PowerPoint-presentation
21st century skills: Critical thinking.
Activities:

Name of activity	Procedure	Time
Lecture	The teacher tells the students what happened to Kristiansund in the summer of 1940, and the students will try to find pictures of the bombed town.	2 lessons

Assessment
The teacher will observe the students when he lectures and when they do their task. He will make notes in his book.

History

Title: How history can teach us about sustainable development
Author(s), Name of school: Morten Valde Lystad, Atlanten senior high school.
SDGs no. 11, 14, 15
Subject: History
Topic: The Industrial Revolution
Integration into the curriculum: The national curriculum in History says: The students shall reflect on how technological upheavals from the Industrial Revolution to the present day have changed people's lives and shaped expectations for the future.
Aim of the lesson: I would like my students to achieve understanding on how The Industrial Revolution gave humans great possibilities to develop, but at the same time that it came with a cost that we are paying today and will for a long time in the future.
Age of students: 17-18 years
Time: Preparation time: 4 hours
Teaching time: 5 x 45 minutes
Teaching materials and tools:
Online:

- Different websites where the students can find out about the area they will present.

Offline:

- PowerPoint
- Historybook

21st century skills
Collaboration and communication, critical thinking and creativity.

Activities

Name of activity	Procedure	Time
Lecture	The teachers presents the historic context of the period – students make notes	1 lesson
Individual work	Each students picks a specific place in Europe (the teacher has made different alternatives) and finds out about industrial activities in that area and the effect on the environment then and today	1 lesson
Group work	The students who have the same area sit together and share what they have found out in a conversation and make a presentation together	1 lesson
Collective	The students with the same area show the presentation to the other students and the class will discuss what was the upside and the downside to the development then and now.	2 lessons

Assessment

The teacher will observe the students individually in lesson 2 and 3 and make notes on activity and knowledge. The pupils will have to write a short rapport on what they think about their own work and contribution in the group work and the presentation. The teacher will have a short talk with all the groups after they have presented what they have found out.

Math

Title: Math lesson - figure numbers – conducted by Marianne Berner and Marianne Sørli
Author(s), Name of school: Atlanten senior high school. Marianne Berner, Marianne Sørli
SDGS: The learning scenario corresponds to 21st century skills (collaboration and communication,, critical thinking, creativity)
Subject: Math
Topic: Figure numbers
Integration into the curriculum
Ability to:

- Discuss and cooperate with others (fellow students)
- Act creatively
- Think critically
- Make reasonable mathematical arguments

Aim of the lesson: The students (in groups of 3) will be introduced to a mathematical problem, which they have to discuss and solve together. They need skills to discuss, think critically and cooperate to solve the problem. In the end – every group share what they have found out in class, and argue for their way of thinking.
Age of students: 16-17
Time: Preparation time: 30 min.
Teaching time: 45 min
Teaching materials and tools
Online tools: None
Offline: Portable plastic blackboards for each group (which are sticked to the wall), whiteboard markers, erasers.
21st century skills
The task measures ability to:

- Discuss and cooperate with others (fellow students) – collaboration
- Think critically and creatively

Activities
(We use the idea of Peter Liljedahl`s way of thinking)
Classmembers divided into groups of 3. Every group has one portable blackboard, and one marker. These are sticked to the wall, and students must stand (important!).
The figure number case is given by teacher, and they solve it together hence to the method mentioned above.

Economics

Title: The role of SMEs in fulfilling the SDGs in developing countries.
Author(s), Name of school: Magdalena Belniak, Kolegium Europejskie w Krakowie
Summary: Understanding the differences between economic growth and development and links to long-term improvements in broad measures of income per capita, education and health care, and reduction of extreme poverty and inequality as a process that opens up new business opportunities for the SMEs.
SDGS goals: almost all. Depends on students creativity, but especially 8 and 10
Subject: Economics, Management
Topic: Economic growth, economic development, sustainable development, SMEs
Integration into the curriculum: According to the IB syllabus endless economic growth, based on the consumption of finite resources, cannot continue indefinitely. This topic covers key concepts: equity, economic well-being, sustainability. Equity refers to the concept or idea of fairness. In economics, inequity is often interpreted to refer to inequality which may apply to the distribution of income, wealth or economic opportunity. Economic well-being as a multi-dimensional concept relates to the level of prosperity and the quality of living standards of the members of an economy. Sustainability in economics refers to ability of the present generation to meet its needs without compromising the ability of future generations to meet its own needs.
Aim of the lesson: Students should distinguish between economic growth and economic development, explain the relationship between these concepts, define sustainable development, explain characteristics of developing countries which represents hindrances to economic growth and development in context of adapting new business models/solutions, and doing business differently – more sustainably and more ethically.
Age of students: 18
Time: Preparation time: 4h
Teaching time: 45 min
Teaching materials and tools
Online: none
Offline: A lecture with a presentation, handouts with exercises
21st century skills
Developing communications skills, collaboration and critical thinking, content knowledge, and social and emotional competencies to navigate complex life and work environments students are more engaged in the learning process and graduate better prepared to thrive in today’s digitally and globally interconnected world.

Activities

Name of activity	Procedure	Time
Lecture	Presentation – introduction to the topic	5 min
Discussion	Consideration of possible economic consequences	8 min
Brainstorming	Developing the solutions to the given problems, in small groups	20 min
Discussion and conclusions	Presentations of students work, comparison of their performance	12 min
		45 min

Assessment

Based of students involvement, solutions, outcomes.

CONCLUSIONS
WNIOSKI

The whole experience was extremely creative and inspiring. The greatest value of the project was the chance to learn from each other - both Norwegian and Polish teachers took advantage of this opportunity.

Through this experience, all teachers wanted to improve cooperation skills among pupils, and make them learn that they will succeed if you don`t give up too soon. The majority of the aims were achieved. Although sometimes there was a great variation in the level of knowledge in the class, all students got more experience in this regard.

In terms of the methods, the teachers tried to get the students involved as much as possible into the lessons.They introduced problem solving methods, deduction, pair work, and many others. As a result, the students understood that in a sustainable world we need sustainable human individuals. They agreed that what matters is to think globally and act consciously as they can every day, because any contribution, big or small, is important when we try to reach the SDGs.

Regarding the comparison of the students from both schools it has to be admitted that there are no differences between them. Teenagers around the world are the same, no matter what country or education system. The dynamic of the lessons was great, the students were interested in the topic and willingly cooperated and fulfilled all tasks.

Całe doświadczenie było niezwykle twórcze i inspirujące. Największą wartością projektu była możliwość uczenia się od siebie nawzajem -zarówno norwescy, jak i polscy nauczyciele skorzystali z tej możliwości. Dzięki temu doświadczeniu nauczyciele nabyli umiejętności inicjowania współpracy między uczniami i skutecznego motywowania – chcieli nauczyć ich, że osiągną sukces, jeśli nie poddadzą się zbyt szybko. Większość celów została osiągnięta. Mimo, że czasami występowało duże zróżnicowanie w poziomie wiedzy w klasie, wszyscy uczniowie zdobyli więcej doświadczenia w tym zakresie.

W kwestii metod, nauczyciele starali się jak najbardziej zaangażować uczniów w lekcje: wprowadzili metody rozwiązywania problemów, dedukcji, pracy w parach i wiele innych. W efekcie uczniowie zrozumieli, że w obecnym świecie potrzebujemy działań mających na celu zrównoważony rozwój. Zgodzili się, że ważne jest, aby myśleć globalnie i działać świadomie, jak tylko mogą, każdego dnia, ponieważ każdy wkład, duży czy mały, jest ważny.

Jeśli chodzi o porównanie uczniów z obu szkół, trzeba przyznać, że nie ma między nimi różnic. Nastolatki na całym świecie są takie same, bez względu na kraj czy system edukacji. Dynamika zajęć była duża, uczniowie byli zainteresowani tematem, chętnie współpracowali i wypełniali wszystkie zadania.

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