

United Nations Sustainable Development Goals Teachers' Resource Book



Edited by: Carolina López C., Ajitha Nayar K., Iván Rodríguez
and Aixchel Cordero Hidalgo

Contributing Authors: Andrea Rivera, Edwin Gómez, Michelle Rivera, David Córdova,
Cristian López, Javier Pichardo, Jesús López, Ramón Hernández and Yessica Vega

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Preface

The *United Nations Sustainable Development Goals Teachers' Resource Book* has been written over the course of one year by English Language Majors enrolled in the Educational Programs and Design Course at Autonomous University of Chihuahua in North Central México. Known as the Young Authors, the nine student contributors to the book are part of the Youth Group at Living Lab/Centro de Diálogo y Transformación Inc., acknowledged by United Nations University-Institute for the Advanced Study of Sustainability as Regional Centre of Expertise on Education for Sustainable Development: Borderlands México-USA. It is our sincere hope that the Teachers' Resource Book will prove valuable for ushering in sustainable development in communities around the world.

Prof. Carolina López C., Ph.D.
Living Lab/Centro de Diálogo y Transformación Inc.
Regional Centre of Expertise Borderlands México-USA
in collaboration with
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14 November 2017

Prologue

The Sustainable Development Goals (SDGs) are a universal (worldwide) set of goals, targets and indicators that United Nations (UN) member states are expected to use to frame their agenda and policies from 2015 to 2030. The 17 goals immediately follow and build on the Millennium Development Goals (MDGs), which were agreed upon by the same UN member states in 2001. Education for Sustainable Development (ESD) on the other hand is the form of education that infuses sustainable development issues into the teaching and learning curricula using all forms of education (formal, non-formal and informal) to transform people, impact skills and change attitudes in the classrooms and the community.

The *United Nations Sustainable Development Goals Teachers' Resource Book* considers both the SDGs and ESD as tools that help students acquire knowledge and create awareness about sustainable development (SD), upturn their values and attitudes, improve their skills, contribute in changing their behaviors and lifestyle choices and also make it possible for their families and communities to take transformative actions toward achieving Sustainable Development.

The nine young authors of this Teachers' Resource Book have developed lesson plans, activities and teaching materials that come with students' self-evaluation, teacher to student evaluation, as well as peer evaluation rubrics. The teaching materials, which include videos and extra readings, will help students understand and elaborate the concept of sustainable development. The book also has illustrations and visual contents to help students assimilate the new information so that they will become agents of change toward achieving sustainable development.

Usman Muhammad Mareri
Global RCE Youth Network
United Nations University

1 NO POVERTY



Source: <http://www.fctc.org/fca-news/opinion-pieces/1347-tobacco-use-hinders-development-in-many-ways>

Sustainable Development Goal 1: No Poverty

SDG 1's Content and Intent

United Nations Sustainable Development Goals 1: No Poverty (SDG 1) aims to eradicate all forms of poverty everywhere on the planet by the year 2030. In addition to insufficient income, 'poverty' includes other challenges, such as the lack of economic, social and educational opportunities; insufficient or non-existent basic services, hunger, exclusion, social discrimination and a lack of voice in decision making processes that impact on people's lives.

Underlying causes of poverty include being part of a colonial past, where wealthy powerful countries settled in the homelands of others, utilizing natural resources and human labor hours to repatriate wealth, raw materials and products to their homelands—leaving a deficit where natural resources and the fruits of human labor were removed from the colonized regions only to add to the wealth of the colonizers. This historical dynamic has led to a state of underdevelopment from which former colonies continue to struggle to emerge to this day.

A further cause of poverty is found in uneven wealth distribution between the rich and the poor within countries while, in the global arena, developing nations may remain locked into the subordinate role of providing raw materials and cheap labor for transnational industries, whose products flood local markets and whose profits are repatriated to the countries from which the finance capital has emerged.

Corruption creates an 'internal hemorrhage' of sorts where wealth is re-directed from its intended purpose into the hands of powerful actors, and of everyday swindlers who may overcharge, or fail to provide the quality of goods and services for which they have charged a client or a customer. The ongoing misuse of wealth and its misappropriation from its intended purpose weakens the overall economy within nations and localities, as well as harming the standard of living and the wellbeing of families whose lives are affected by the corrupt practices of others.

A deeply-rooted and common source of poverty is found in low wages that do not allow families to enjoy a decent standard of living. The disparity between income, purchasing power and the minimum amounts of capital needed to enjoy a decent living are often coupled with lack of access to services and benefits, such as healthcare, job security, home loans, a retirement plan, and so on.

Women and children constitute segments of society that are disproportionately affected by poverty. This is due largely to persistent gender inequality, which has been handed down through the generations of human society. Females tend to earn less than their male counterparts who carry out the same work. This historical inequality limits women's ability to provide for their children, thereby exacerbating the multi-faceted aspects of poverty that impact on children's lives. Reproductive issues pose further challenges to women and to the children for whose lives they are responsible. Early pregnancy, the lack of education and of opportunities to achieve a better income and lifestyle often plague females, and particularly female-headed households. The resulting poverty impacts heavily on young children, affecting their education, health, nutrition and security. It can also be detrimental to children's spiritual and emotional development due to the environment that poverty creates.

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What awareness should students have acquired by the end of this teaching unit?

By the end of the teaching unit, students should be aware of the structural causes of poverty which are part and parcel of a system that allows for unbridled accumulation on the part of the wealthy, often at the expense of the less well off. Students should further be able to identify and discuss problems that disproportionately affect vulnerable groups, such as women, children and ethnic minorities—who frequently face crippling discriminatory practices on behalf of those who hold power over and in their societies.

What values and attitudes should students have developed by the end of this teaching unit?

An attitude of respect for all people should be a primary outcome of the unit on SDG 1. Students should clearly see the fallacy in ideologies that blame the poor for their situation while ignoring the structural causes that create and sustain poverty for billions of human beings around the planet. They should possess an awareness of how the comfort and the

privilege that some of us enjoy are partially responsible for the poverty that other segments of human society face day-by-day.

What skills should students have developed by the end of this teaching unit?

Skills acquired should include the ability to analyze situations of poverty and privilege, and to see the symbiotic relationship between them. Students should further be able to identify, point out, articulate and help others see the myriad causes of poverty and the ways forward on the path toward its full eradication by the year 2030.

What behaviors and lifestyle choices should students have adopted by the end of this teaching unit?

Students should understand and be able to discuss situations of poverty and privilege. They should be willing to advocate for the redirection of structural injustices that exist in policy regimes and in everyday life. Having adopted awareness and values that repudiate poverty resulting from injustice, students may tend to consume less, to be more aware of salaries, benefits, profits and other aspects of how economic policies and practices impact on the fullness of life, or the lack thereof, which arise from situations and structures that perpetuate poverty.

What transformative actions might students put forth to their families and communities by the end of this teaching unit?

The first step is for students to generate awareness of poverty and its causes among family, friends and community members. A further step would be for students and those around them to encourage and support local businesses and services in order to help keep the local economy vibrant and abundant. By increasing consumption from local sources and reducing unnecessary expenditure on non-essential goods from faraway places, communities can begin to shift the dynamic toward increased wellbeing in their respective localities.

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 1

Theme/Topic:

No Poverty

Lesson Outcomes/Objectives:

Students will:

1. Gain awareness about poverty in their community, city, state, country and worldwide
 2. Understand poverty around the world
 3. Reflect on how we as a society can transform poverty into self-sufficiency for all
-

Activities/Tasks:

1. Explain the concept of poverty to students by showing pictures displaying various conditions that reflect poverty and abundance -- poor households, rich households, poor neighbourhoods, rich neighbourhoods, slums, megacities. This will stimulate the thinking process and help students to contribute to the discussion ,

1.1 Teacher and students work together to create a definition for the term 'poverty.' Show the video "What is poverty?" (listed below)

2. Asks students to discuss what they know about poverty, first in their community, then in their city, country and finally worldwide

3. Ask students what they can do to eradicate poverty, beginning from their locality, and then building outward up to the global level.

- In teams: Students locate relevant information on the internet from reliable web pages (Remind them to cite all sources).

- Observe and discuss examples of solutions to local and global poverty given by organizations around the world.

Key Questions:

- What is Poverty?

- Are there examples of poverty in your community? Please discuss.

- How can we help a locality transform itself out of poverty and into self-sufficiency?

Assessment: (Teacher, Peer, Self)

(See the evaluation rubrics below)

Activities student will apply in his/her personal life

- Have students keep a daily log examining their lifestyle choices in terms of sufficiency, abundance and sustainability
- Ask students to reflect on personal actions they can take to increase self-sufficiency in their lives, their family, their community, etc.
- Help students design a lifestyle exercise that encourages sustainability and sufficiency
- Have students continue with the daily log comparing their ‘before’ and ‘after’ lifestyles in terms of sufficiency, abundance and sustainability.

Activities student will apply with his/her community

- Identify situations and places where poverty exists in their community
- Discuss local situations and brainstorm solutions that the student can apply to help their locality transform into self-sufficiency

Readings & information sources:

Videos:

“No poverty, Ted Talks.” <https://www.youtube.com/watch?v=-vwy4FF4tcg>.

“ECOSOC Youth Forum: Migration and Refugees – The Youth’s Perspective, with You-Tuber Nabela.” <http://www.un.org/sustainabledevelopment/blog/category/video-poverty/>

“What is Poverty?- Compassion International” <https://www.youtube.com/watch?v=Boy-ioIdhAmg>

“Sustainable Development Goal #1 | No Poverty | Youth4GlobalGoals”

<https://www.youtube.com/watch?v=rNDmxSQKZiM>

“#GlobalGoals 1: No Poverty - Can you make it happen?” https://www.youtube.com/watch?v=sRSG66Wp_CQ

Illustrations:

<http://www.carbonated.tv/.../the-poverty-line-a-photo-series-...>

<https://visual.ly/community/infographic/economy/ending-poverty-within-our-reach>

Subject skills utilized:

Geography

Mathematics
Language
Arts
History
Science
Civics and Ethics
Physical Education

Partnerships for the goals

- Students begin by implementing their 'Poverty Eradication Plan' in their community. Be sure that they create a calendar indicating dates for reaching each step in their implementation plan.
 - Students and teacher analyze progress toward project goals. Identify strengths and weaknesses in the implementation process. Wherever weaknesses are identified in the implementation process, students will reassess and redirect project implementation plans in order to maximize the transformative potential of their activities.
 - Seek institutions that can help multiply and widen implementation beyond the immediate locality, moving outward in concentric circles.
 - Involve parents, school personnel, community members, authorities, the business sector and the non-governmental sector.
-

Resources/Organisation:

ImportantIndia Discover India with importantIndia.com <http://www.importantindia.com/19284/short-paragraph-on-poverty/>
The Borgen Project
<https://borgenproject.org/top-10-global-poverty-nonprofits/>
The Guardian
<https://www.theguardian.com/society/2012/may/06/lifestyle-communities-hebden-bridge-todmorden>

TEACHER TO STUDENT EVALUATION RUBRIC					
Student's Name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Student has identified and understands areas where he or she can help move his/her community toward sustainability and self-sufficiency.					
Quality and feasibility of student's self-sufficiency project for his/her community.					
Student's level of involvement in project implementation.					
Measureable advances toward self-sufficiency and sustainability in the locality.					
Comments:					

PEER EVALUATION RUBRIC					
Student evaluating:	Poor	Fair	Average	Good	Excellent
Student evaluated:	1	2	3	4	5
Level of knowledge and ability to identify self-sufficiency and sustainability challenges in the locality.					
Usefulness of solutions created and implemented by your classmate.					
Genuine transformations are being generated in the school and community as a result of my classmate's efforts.					
Comments:					

SELF-EVALUATION RUBRIC					
Student's Name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
I can identify, and I am concerned about lack of self-sufficiency and sustainability in my community.					
I will actively seek positive transformations for my lifestyle and my community.					
I will implement concrete actions to alleviate poverty.					
I encourage my community to work against poverty.					

Videos



“What is Poverty? - Compassion International”



“ECOSOC Youth Forum: Migration and Refugees – The Youth’s Perspective, with YouTuber Nabela by United Nations”



“SDG 1- No Poverty- Ted Talks”

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Extra Videos

“Sustainable Development Goal #1 | No Poverty | Youth4GlobalGoals”



“#GlobalGoals 1: No Poverty - Can you make it happen?”

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United Nations. (2018). ECOSOC Youth Forum: Migration and Refugees – The Youth's Perspective with YouTuber Nabela [Video file]. Retrieved from <http://www.un.org/sustainabledevelopment/blog/category/video-poverty/>

Extra videos

AIESEC. (2016). Sustainable Development Goal #1 | No Poverty | Youth4GlobalGoals [Video File]. Retrieved from <https://www.youtube.com/watch?v=rNDmxSQKZiM>

Unilever. (2015). #GlobalGoals 1: No Poverty - Can you make it happen? [Video file] Retrieved from https://www.youtube.com/watch?v=sRSG66Wp_CQ

Readings

“What is Poverty?”

Short Paragraph on Poverty

On July 5, 2015 By Team Work
Category: Essays, Paragraphs and Articles

What is Poverty?

Poverty means deprivation of basic necessities such as food, house, clean drinking water, shelter, toilet, etc. Poverty is mostly prevalent in developing countries such as India, Bangladesh, Africa, Latin America, etc.

Poor people stay in underprivileged living environment. Without adequate food and nutrition, many poor people suffer from malnutrition. Without clean drinking water, they are forced to either stay thirsty or drink unclean water.

Young children are seen engaged as **child labors**. Without proper sanitation and toilets, they are forced to defecate on open fields. Homeless people have no choice but to live in the open.

Top 10 Global Poverty Nonprofits



Let's begin with the obvious, all of us at [The Borgen Project](#)... are big fans of The Borgen Project. Our bias aside, here is a list of 10 of the top global poverty nonprofits:

“Top 10 Global Poverty Nonprofits”

Extra Readings

“Goal 1: End poverty in all its forms everywhere”

Goal 1: End poverty in all its forms everywhere



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Work, T. (2015). Short Paragraph on Poverty. Retrieved from <http://www.importantindia.com/19284/short-paragraph-on-poverty/>

Extra reading

United Nations Sustainable Development. (n.d.). Goal 1: End poverty in all its forms everywhere. Retrieved from <http://www.un.org/sustainabledevelopment/poverty>

Illustrations



“The Link Between Poverty and Hunger”
By IFDC



“Ending poverty is within our reach” By World Bank



Extra Information

“Goal 1: End poverty in all its forms everywhere” By @xLontrax 2016

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“Ending Poverty starts at home” By UCLG



“Why poverty” By Elizabeth O. Crawford,
Ph.D.

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Global Goals. (n.d.). Goal 1. No Poverty, End poverty in all its forms everywhere. [Digital Image]. Retrieved from <https://www.globalgoals.org/1-no-poverty>

2 NO HUNGER



<https://sdgcompass.org/sdgs/sdg-2/>

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Sustainable Development Goal 2: Zero Hunger

Summary of SDG 2's Content and Intent

The aim of United Nations Sustainable Development Goal 2 (SDG 2) is to end hunger, improve nutrition and promote sustainable agriculture worldwide.

Global statistics on nutrition indicate that 1 in 9 people are undernourished, with the majority of these individuals living in developing countries. Inadequate nutrition is the underlying cause of death each year for approximately 3.1 million children under five years of age. Major causes of hunger and malnutrition are linked with the global food supply system, food distribution, and the use of food for geopolitical purposes. Monoculture food crops produced for export in impoverished regions of the planet leave a deficit, or a lack of food to be consumed in the locality, exacerbating hunger and malnutrition in the very places where food is grown to be consumed in the wealthier nations of the world. Transnational agribusinesses often plant cash crops for export in the arable lands of developing nations. In other cases, local farmers grow agricultural products destined for consumers in wealthy nations, since export crops often bring higher returns than growing food to meet the nutritional and caloric needs of local communities.

Agriculture in the wealthy nations tends to be highly subsidized, allowing farmers to produce cheap surplus foods that flood developing nations, making it difficult for local farmers to sell their crops for a profit. Trade barriers imposed by rich nations on agricultural products from abroad cause further distortions in the global food supply. Food stored in wealthy nations for sale when the market is favorable would go a long way to overcome world hunger; however, difficulties in distribution as well as the use of food for profit and for geopolitical strategic purposes are all underlying causes of the food and nutrition problems felt around the world.

Lack of infrastructure, inputs, access to seasonal credits, and dependence on Green Revolution agro-industrial technologies continue to have detrimental effects on food safety and on the health of the land on which our food is grown. SDG 2 aims to empower local farmers to produce nutritious, safe, affordable, and sufficient food for the localities where they live and beyond.

Agricultural activities constitute the largest source of income and employment for rural households worldwide, comprising 40% of the livelihoods for the global workforce. Of this 40%, women make up around 43% of the global agricultural workforce in developing countries; yet they own only 20% of the land. The disadvantages women face in owning agricultural land is a major underlying cause of hunger and malnutrition in women and children in the developing world.

By 2030, SDG 2 aims to ensure access for 100% of the human population to safe, nutritious and sufficient food, year round. All forms of malnutrition should be eliminated by 2025. Special attention is to be given to the caloric and nutritional needs of adolescent girls, pregnant and lactating women, children and older persons. The agricultural productivity and income of small-scale producers, women, ethnic minorities, family farmers, pastoralists and fishermen should double between 2015 and 2030. In order to achieve this, sustainable, resilient, high yield food production systems must be developed with techniques that help maintain ecosystems, improve soil quality, and assist in the adaptation to climate change and extreme weather.

The genetic diversity of seeds, plants and animals must be conserved through well-administered seed and plant banks; and access to traditional genetic agricultural resources should be fair. This requires a review of the legality and the ethics of patenting agricultural resources through the World Trade Organization, which has put holders of traditional knowledge at a disadvantage vis-à-vis Western agri-businesses over the last half century. Secure and equal access to land, knowledge, financial services, markets, and opportunities for money making must be guaranteed for all sectors of the human population across the planet.

What awareness should students have acquired by the end of this teaching unit?

By the end of the teaching unit, students should be aware of the role that the structures of the global food system play in the perpetuation of hunger and malnutrition. They should know about the pros and the cons of Green Revolution-derived agro-technologies, and how these offer high yield while putting in danger seed and plant genetics, traditional agricultural knowledge, soils and ecosystem wellbeing, as well as the nutritional value and the safety of the food supply for human consumption. Students should know how the demand of developed countries impacts on the food supply in developing regions of the planet. They

should have a general awareness of emerging high yield, healthy, organic, ecosystem-friendly food production systems based, for example, on Agroecology, Permaculture and Biointensive Organic Agriculture systems, among others.

What values and attitudes should students have developed by the end of this teaching unit?

The emergence of desired values and attitudes begins with the ability to detect inter-linked factors that exacerbate hunger and malnutrition worldwide. Having developed this vision, students will see the value of local consumption, and of supporting safe agriculture and land-based practices. They will come to value the importance of seasonal consumption of fresh agricultural produce, while recurring to products that have been preserved in a healthy fashion for consumption during the off seasons.

What skills should students have developed by the end of this teaching unit?

By the end of this teaching unit, students will understand and share their knowledge about the importance of native seed crops and traditional knowledge, as well as the synergies that must be established between the aforementioned and emerging agricultural systems, such as Agroecology, Permaculture and Biointensive Organic Agriculture, among others.

What behaviors and lifestyle choices should students have adopted by the end of this teaching unit?

Students should be mindful of the sources of their food, the transportation costs from farm to table, and the impacts that their eating habits have on communities and on agricultural lands around the world. Having discovered these connections, students may develop an interest in supporting local agriculture, farmers' markets, and the consumption of less meats and more safely-grown fruits, nuts and vegetables.

What possible transformative actions can be put forth to students' families and communities by the end of this teaching unit?

Students are encouraged to share their knowledge of the interdependence of g/local food systems, food safety, transport costs, and how the agricultural demand in developed countries impacts on distant lands and their peoples. Students may wish to start a community garden, or encourage local authorities to develop edible parks and invest in edible landscaping.

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 2

Theme/Topic:	Lesson Outcomes/Objectives:
No Hunger	<p>Students will understand:</p> <ol style="list-style-type: none">1. The concept of hunger1.1 Structural causes of hunger around the world1.2 Causes of hunger and the impacts of malnutrition in their communities <p>Students will:</p> <ol style="list-style-type: none">2. Know different examples where hunger has been eradicated by social programs2.2 Know about an institution in their country that helps eradicate hunger and malnutrition in different communities <p>Students will:</p> <ol style="list-style-type: none">3. Create a proposal and an action plan where they will work to eradicate hunger and malnutrition in their locality

Activities/Tasks:

1. Introduction to the topic: Hunger around the world.
 - 1.1 Encourage students to give their personal ideas on 'hunger.' Help students to define the term 'hunger' with the help of illustrations and anecdotes Identify places and examples where hunger is prevalent.
 - 2.1 Analyze structural and local causes of hunger and malnutrition.
 - 2.2 Discussion: How can hunger and malnutrition be eradicated locally? Globally?
 - 2.3 Study solutions to hunger and malnutrition that have been applied around the world (Examples)
 - What examples can be applied in our communities?
 - How can we apply those examples?
 3. Imagine a situation, in which you are one of those who suffer from hunger in your community. How can you be self-empowered to help solve this problem so that you and your loved ones can have sufficient food and adequate nutrition?
-

Key Questions:

- What are some of the underlying causes of hunger in the world?
 - What institutions globally and locally help to solve problems of hunger and malnutrition?
 - What are some of the places around the world where hunger is prevalent? Why?
 - What solutions can we propose to eradicate hunger and malnutrition locally? Nationally? Globally?
-

Assessment: (Teacher, Peer, Self)

(Please find the evaluation rubrics below)

Activities student will apply in his/her personal life.

- Can you identify communities or people in your locality who suffer from hunger and malnutrition?
 - Please propose solutions to decrease hunger and increase good nutrition in your community, nationally, globally.
-

Activities student will apply with his/her community.

- Identify institutions and organizations in your community where you can collaborate as a volunteer.
-

Readings & Information Sources:**Videos:**

- “SDG 2- Zero Hunger- Ted Talks” https://www.youtube.com/watch?v=YLldS3S_AOI
- “#SDGLive: Ertharin Cousin of the World Food Programme on ‘Healthy Not Hungry’” <http://www.un.org/sustainabledevelopment/blog/2017/01/video-ertharin-cousin-of-the-world-food-programme-on-healthy-not-hungry/>
- “Ending Hunger in Our Lifetime | Asha Gomez | TEDxMarthasVineyard” <https://www.youtube.com/watch?v=ls1Zv4dYEF0>
- “Moving toward a hunger solution: Bruce Ganger at TEDxJacksonville” <https://www.kfla.org/en/tedtalks/220-bruce-ganger-moving-toward-a-hunger-solution-bruce-ganger-at-tedxjacksonville>
- “#GlobalGoals 2: Zero Hunger - Can you make it happen?” <https://www.youtube.com/watch?v=0ncskht7e8g>
-

Illustrations:

IFDC Developing Agriculture from the Ground Up

<https://ifdc.org/2014/03/03/food-waste-2/Causes>.

<https://ifdc.org/2014/05/29/family-farmers-fighting-against-food-waste-and-hunger/>

Solutions

Global Hunger Index [https://assets.weforum.org/editor/Sb6Yghq-](https://assets.weforum.org/editor/Sb6Yghq-NoZseov3im4RY_f7e8Lfpor_jouocJ_6Upk.png)

NoZseov3im4RY_f7e8Lfpor_jouocJ_6Upk.png information.

Subject skills utilized:

Geography

Mathematics

Language

Arts

History

Science

Civics and Ethics

Physics

Partnerships for the goals:

-Students must become aware of the problems of hunger and/or malnutrition in their communities.

- Each student must locate an organization that works to overcome hunger and malnutrition in their locality.

- They should seek to participate as a volunteer so that they may become part of the solution to hunger and malnutrition in their community.

Resources/Organisation:

Organizations/ Solutions:

“GreenGrow, Growers of food, flowers and neighborhoods”

<http://www.greengrow.org/urban-farm/what-is-urban-farming/>

“World Economic Forum”

<https://www.weforum.org/agenda/2017/01/5-steps-towards-ending-hunger-worldwide>

“United Nations”

<http://www.un.org/en/zerohunger/challenge.shtml>

TEACHER TO STUDENT EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Student's understanding of:					
1) Hunger and malnutrition					
2) The causes of hunger					
Quality and feasibility of student's proposed solution to hunger and malnutrition in the locality.					
Degree and quality of the student's involvement in a solution to hunger and malnutrition.					
Usefulness of students' intervention for eliminating hunger and malnutrition.					
Comments:					

PEER EVALUATION					
Student evaluating:	Poor	Fair	Average	Good	Excellent
Student evaluated:	1	2	3	4	5
Your classmate's level of understanding of hunger and malnutrition					
Quality and feasibility of his/her proposed solutions to hunger and malnutrition					
Level of his/her commitment and participation in providing solutions to hunger and malnutrition					

SELF EVALUATION					
Name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
My level of awareness and concern about hunger and malnutrition in my community					
My level of commitment to being a part of the solution in the present and the future					
What will I do to encourage my community to work against hunger and malnutrition in my community? Nationally? Around the world?					

Videos



“SDG 2- Zero Hunger”



“#SDG Live: Ertharin Cousin of the World Food Programme on 'Healthy Not Hungry'”
by GlobalGoalsUN

46



“Ending Hunger in Our Lifetime”



“Moving toward a hunger solution”

Extra Videos



“#GlobalGoals 2: Zero Hunger - Can you make it happen?”

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- Ganger, B. (2013). Moving toward a hunger solution: Bruce Ganger at TEDxJacksonville [Video file]. Retrieved from <https://www.kfla.org/en/tedtalks/220-bruce-ganger-moving-toward-a-hunger-solution-bruce-ganger-at-tedxjacksonville>
- Global Goals UN. (2017) #SDGLive: Ertharin Cousin of the World Food Programme on 'Healthy Not Hungry' [Video file]. Retrieved on from <http://www.un.org/sustainabledevelopment/blog/2017/01/video-ertharin-cousin-of-the-world-food-programme-on-healthy-not-hungry/>
- Gomez, A. (2015). Ending Hunger in Our Lifetime | Asha Gomez | TEDxMarthasVineyard [Video file]. Retrieved from <https://www.youtube.com/watch?v=ls1Zv4dYEF0>

[Let's change]. (2017). SDG 2- Zero Hunger- Ted talks [Video file]. Retrieved from https://www.youtube.com/watch?v=YLldS3S_AOI

Extra video

Unilever. (2015). #GlobalGoals 2: Zero Hunger - Can you make it happen? [Video file]. Retrieved from <https://www.youtube.com/watch?v=0ncskht7e8g>

Readings

“What is Urban Farming?”



WHAT IS URBAN FARMING?

Attend a food conference today and in all likelihood there will be a tract on urban farming. There will be participants and speakers referring to themselves as urban farmers. Google “urban agriculture” and you will find thousand of sites. Urban farming is clearly in the minds eye of many individuals, community groups, food justice advocates, environmentalists, city planners and gardeners. That’s great, but what does it all mean, what is urban agriculture and why all the interest now? After all, growing food in cities is not a new concept.

As with most things, ask two different people and you will get two different answers. So we’ll speak for ourselves and for what we’ve learned as urban farmers.

We can eradicate hunger by 2030. Here's how

“We can eradicate hunger by 2030. Here’s how”



“The Challenge: Hunger can be eliminated in our lifetimes”

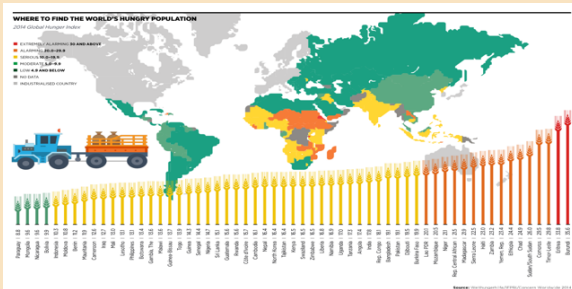
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Cousin, E. (n.d.). 5 steps towards ending hunger worldwide. Retrieved from <https://www.weforum.org/agenda/2017/01/5-steps-towards-ending-hunger-worldwide>

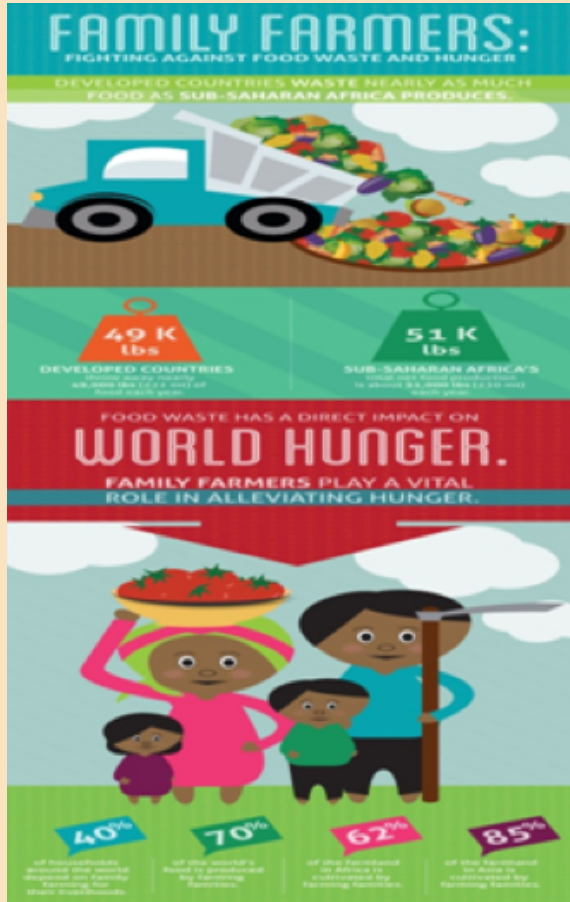
Greensgrow. (n.d.). What is Urban Farming? Retrieved from <http://www.greensgrow.org/urban-farm/what-is-urban-farming/>

United Nations. (n.d.). Zero, hunger, challenge, UN, United Nations, food, sustainable, children, systems, hunger, eliminated. Retrieved from <http://www.un.org/en/zerohunger/challenge.shtml>

Illustrations



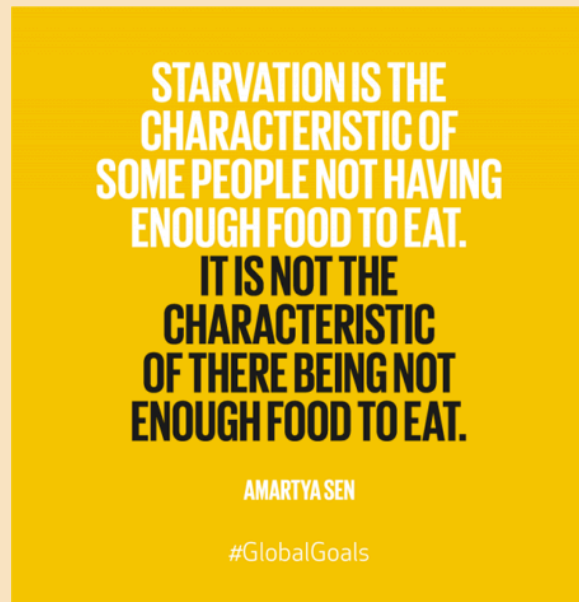




Extra Images



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Global Goals. (n.d.). Goal 2: Zero Hunger [Digital Image]. Retrieved from <http://www.globalgoals.org/global-goals/no-hunger/>

IFDC. (2015). Family Farmers: Fighting Against Food Waste and Hunger [Digital Image]. Retrieved from <https://ifdc.org/2014/05/29/family-farmers-fighting-against-food-waste-and-hunger/>

IFDC. (2015). Food Waste [Digital Image]. Retrieved from <https://ifdc.org/2014/03/03/food-waste-2/>

Oikosvienna, V. (2016). SDG 2: Zero Hunger [Digital Image]. Retrieved from <https://oikosvienna-blog.com/2016/11/29/sdg-2-zero-hunger/>

Realia



3

GOOD HEALTH AND WELL-BEING



<https://sdgcompass.org/sdgs/sdg-3/>

55

Unit Author: Andrea Rivera

Sustainable Development Goal 3: Good Health And Wellbeing

Summary of SDG 3's Content and Intent

The aim of United Nations Sustainable Development Goal 3 (SDG 3) is to ensure healthy lives and promote wellbeing for all people at all ages and all stages of life. In order to achieve this goal, every individual should have access to quality affordable healthcare through universal coverage plans in countries throughout the developed and the developing world. Universal healthcare should include financial risk protection and access to needed medicines and vaccines.

Significant advances have been made in our time to increase life expectancy and reduce common causes of premature death as well as child and maternal mortality. Nonetheless, more must be done in order to reduce neonatal deaths and child mortality for children under five. Women's health care, sex education and family planning, as well as sexual and reproductive health are to be prioritized under SDG 3.

Advances in access to clean water and sanitation have decreased the incidence of diseases across the globe. It is imperative, nonetheless, to continue reducing malaria infection, tuberculosis, polio, HIV/AIDS and tropical diseases, among others. Water borne and non-communicable diseases should be further reduced through healthy lifestyles, disease prevention, early detection and timely effective treatment.

Mental health and wellbeing services need to be expanded and access made available broadly across the globe. The consumption of tobacco, alcohol and other types of drugs needs to be treated as an educational issue and, in the case of addiction, as a medical problem.

The incidence of road traffic death and injury must also be decreased. This target can be achieved through improvements in transportation infrastructure and through advanced vehicle safety features, drivers' education, and programs designed to raise awareness of traffic dangers and hazards.

SDG 3 further aims to reduce death and illness caused by pollution and contamination. Action must be taken to decrease health problems arising from human-generated toxins, such as hazardous chemicals, dangerous air quality, as well as food, water, and soil pollution or contamination.

What *awareness* should students have acquired by the end of this teaching unit?

Students should be aware of the need for access to quality and affordable healthcare on the part of all people everywhere. They should be able to detect linkages between lack of access to medical care and vested monetary interests, such as those of the pharmaceutical and the medical insurance industries. They should be capable of identifying differences in the quality of healthcare, healthcare infrastructure and health services among different social classes within countries, and between developed and developing countries around the world. Students should also be aware of the special health-related challenges faced by women, young children and the elderly.

What *values and attitudes* should students have developed by the end of this teaching unit?

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Awareness gained through the present chapter should help instill values and attitudes that encourage personal lifestyle choices promoting optimum health and wellbeing. Furthermore, students will learn to value access to quality affordable healthcare for themselves and for the whole of humanity.

What *skills* should students have developed by the end of this teaching unit?

Students will be able to explain the relationship between healthcare for profit and problems of access and affordability for individuals in certain populations around the world. They will identify and explain differences in the quality of healthcare services available to the wealthy and the less-well-off, as well as similarities and differences between healthcare services and systems in countries around the world.

What *behaviors and lifestyle choices* should students have adopted by the end of this teaching unit?

By the end of this teaching unit, students should be motivated to make healthy lifestyle choices in terms of nutrition, intimate practices, road safety, drug, alcohol and tobacco use, among others.

What possible *transformative actions* might be put forth to *students' families and communities* by the end of this teaching unit?

Students will be encouraged to promote healthy lifestyle activities with family, friends and community members. They may wish to engage in a series of topical discussions with peers and family about health-related topics, such as drug, alcohol and tobacco consumption, sexual decisions, road safety, good nutrition, exercise, disease prevention and treatment, among others.

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 3

Theme/Topic:

Good Health and Well-being

Lesson Outcomes/Objectives:

1. Explore the meanings and the requirements for good health and wellbeing.
 2. Create and implement steps to promote and maintain good health & wellbeing for yourself, your family and the wider community.
-

Activities/Tasks:

1. Discuss: 'What is involved in Good Health and Wellbeing?'
 - 1.1 Teacher introduces the topic and welcomes students' ideas on Good Health, Wellbeing and the differences between Good Health and Wellbeing. Students give examples of Good Health and Wellbeing (Introduction)
 2. In teams, brainstorm steps to achieve and maintain Good Health& Wellbeing
 - 2.1 Present your steps to the group
 - 2.2 As a group, put together all the steps in order to create a list of best practices.
 - 2.3 Individually, students create a list of practices that will allow them to develop and maintain a lifestyle designed to maintain and promote health and wellbeing
 - 2.4 All together, students will share their list and as a group; they will create a poster to post in their school so that the rest of school's population can see their ideas for healthy lifestyle, good health and wellbeing.
-

Key Questions:

- What constitutes good health and wellbeing?
- How can a person best ensure good health and wellbeing for themselves, their family and their community?
- What habits can help us have good health and wellbeing?

Assessment: (Teacher, Peer, Self)

(Please find the evaluation rubrics below)

-
- Create a series of steps for developing habits for good health and wellbeing.
 - Create an action plan for implementing lifestyle habits that promote health and wellbeing.
-

Activities student will apply in his/her personal life.

- Students will follow the healthy lifestyle steps that they have created.
 - Students will discuss their lifestyle plan with family and friends.
 - Students will keep a diary of lifestyle changes for good health and wellbeing for themselves and their families.
-

Activities student will apply with his/her community.

Students will follow the healthy lifestyle steps they have designed for their personal life. They will encourage their families, and then their communities to do the same. Posters will be created and posted with healthy lifestyle information. Talks and other lifestyle activities will be offered by the students.

Readings & information sources:

Videos:

“The Sustainable Development Goals Explained: Good Health and Wellbeing” <https://www.youtube.com/watch?v=Fzz3Rr8fd2Q>

“9 Simple Steps to Good Health & Wellbeing” <https://www.youtube.com/watch?v=IOiqa-C7PnI8>

“SDG 3: Good health and wellbeing” <https://www.youtube.com/watch?v=dynOmPY-8bhA>

Illustrations:

“5 simple steps to wellbeing” <http://www.liveitwell.org.uk/poster-v3-copy/>

“The food pyramid” <http://www.hse.ie/eng/about/Who/healthwellbeing/Our-Priority-Programmes/HEAL/Healthy-Eating-Guidelines/>

“Wellbeing and how to achieve it” <http://www.instantdisplay.co.uk/phse.htm>

Subject skills utilized:

Geography
Mathematics
Language
Arts
History
Science
Civics and Ethics
Physical Education

Partnerships for the goals:

Establishing all the steps and putting them into practice in our families, communities and ourselves can be difficult. Nonetheless, we will try to make the shift little by little toward healthy lifestyles.

Resources/Organization:

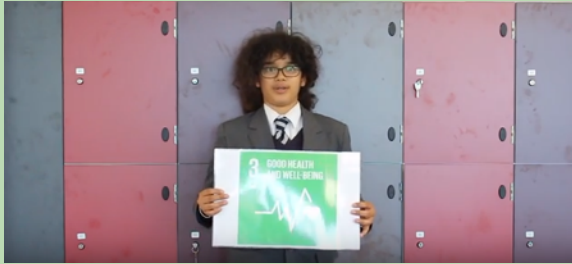
“How can you improve your mental health and wellbeing in 2016?” <http://www.medical-newstoday.com/articles/286428.php>
“Meal Prep 101 For Beginners” <https://www.kaylaitsines.com/blogs/lifestyle/18903859-meal-prep-101-for-beginners>
“Goal 3: Ensure healthy lives and promote well-being for all at all ages” <http://www.un.org/sustainabledevelopment/health/>

TEACHER TO STUDENT EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
The student understands what lifestyle habits are needed to help ensure good health and wellbeing					
The student actively presents healthy lifestyle choices information to help her/his community					
The student is committed and involved in team work to promote healthy lifestyle choices for self, family and community					
The students' lifestyle choices proposal is useful for self, family and community					
Comments:					

PEER EVALUATION					
Student Evaluating:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Student Evaluated:					
My classmate understands what is involved in good health and wellbeing.					
Please rate your classmate's healthy lifestyle proposal on a scale of one to five.					
My classmate offers useful opinions to help develop healthy lifestyles for him/herself and others.					
Comments:					

SELF EVALUATION					
Name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
I am concerned about how my choices impact on my health and wellbeing.					
I am going to follow my life-style choices proposal in the future.					
I will encourage my family and my community to develop healthy lifestyles					
Answer this honestly. What solutions did I propose that were possible to follow in my society?					

Videos



SDG 3: Good Health and Wellbeing by Green Economy

Extra Videos



“9 Simple Steps to Good Health & Well Being”

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“Sustainable Development Goals Explained: Good Health and Well-being”



“Well-being is a skill: Richard Davidson”



“Kid Life Health & Wellbeing Workshops For Kids”

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- Emergency Essentials. (2016). 9 Simple Steps to Good Health & Well Being [Video File]. Retrieved on from <https://www.youtube.com/watch?v=IOiqaC7PnI8>
- Green Economy. (2016). SDG 3: Good health and wellbeing [Video File] . Retrieved from <https://www.youtube.com/watch?v=dynOmPY8bhA>
- United Nations. (2015). Sustainable Development Goals Explained: Good Health and Well-being [Video File]. Retrieved from <https://www.youtube.com/watch?v=Fzz3Rr8f-d2Q>

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Kid Life. (2015). Kid Life Health & Wellbeing Workshops For Kids [Video File]. Retrieved from <https://www.youtube.com/watch?v=e3Vin-M-phE>

Wisdom 2.0 (2015). Well being is a Skill: Richard Davidson [Video File]. Retrieved from <https://www.youtube.com/watch?v=EPGJU7W0N0I>

Readings

Goal 3: Ensure healthy lives and promote well-being for all at all ages



“Goal 3: Ensure healthy lives and promote well-being for all at all ages by United Nations Sustainable Development”

How can you improve your mental health and well-being in 2016?

By Honor Whiteman | Published Tuesday 5 January 2016



The new year is here, and most of us are likely to have made at least one resolution for 2016. But while the majority of our goals for the coming year will incorporate improvements in physical health - such as hitting the gym and losing weight - have you thought about how you could improve your mental health?

See Also

ADVERTISEMENT

- [Mental Health Treatment Programs](#) →
- [Mental Depression Help](#) →
- [Diet for Weight Loss](#) →

“How can you improve your mental health and well-being in 2016? by Honor Whiteman”

Meal Prep 101

“Meal Prep 101 For Beginners”



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Itsines, K. (2015). Meal Prep 101 For Beginners. Retrieved from <https://www.kaylaitsines.com/blogs/lifestyle/18903859-meal-prep-101-for-beginners>

United Nations. (n.d.). Goal 3: Ensure healthy lives and promote well being. Retrieved from <http://www.un.org/sustainabledevelopment/health/>

Whiteman, H. (2016). How can you improve your mental health and well-being in 2016? Retrieved from <https://www.medicalnewstoday.com/articles/286428.php>

Illustrations

5 Simple Steps to Wellbeing

- 1. Connect**
With people around you.

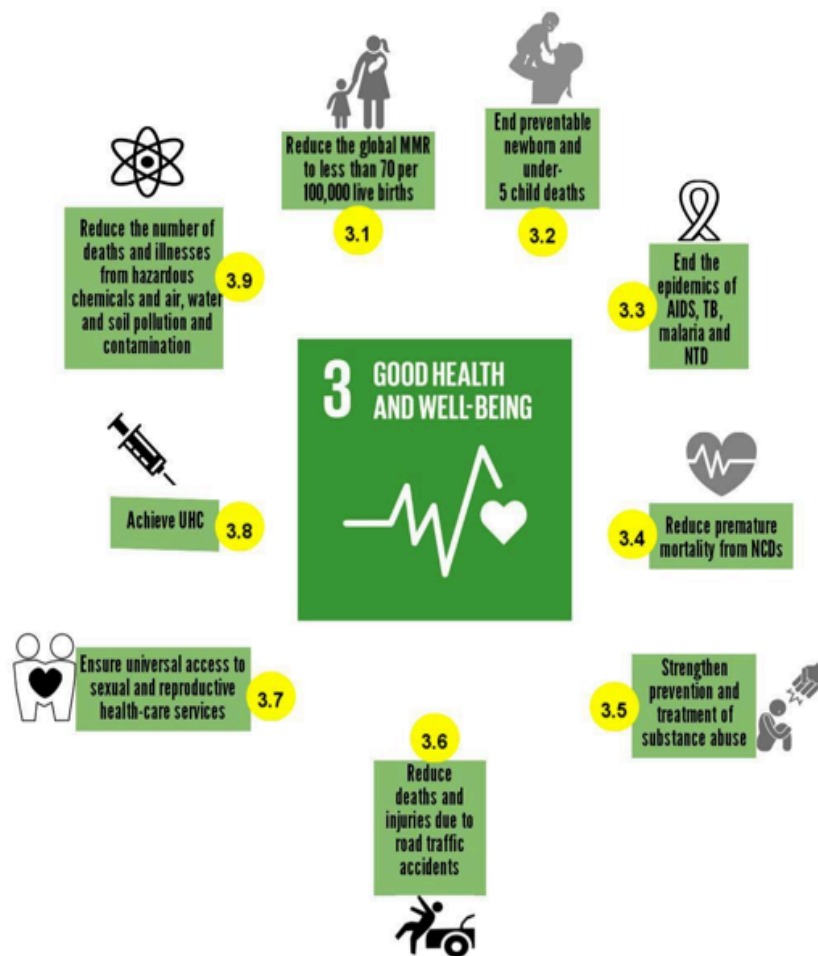
- 2. Be Active**
Exercise makes you feel good.

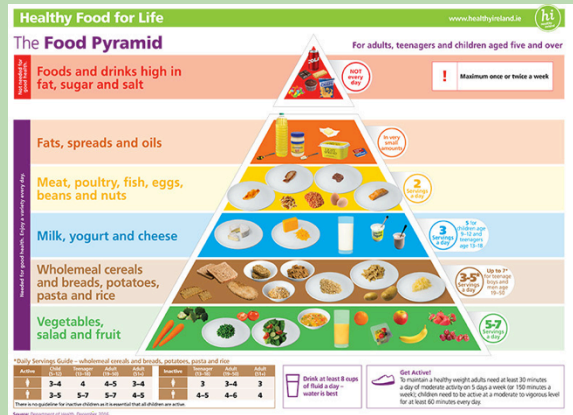
- 3. Take Notice**
Be aware of the world around you and what you are feeling.

- 4. Keep Learning**
Learning new things is fun and will make you feel more confident.

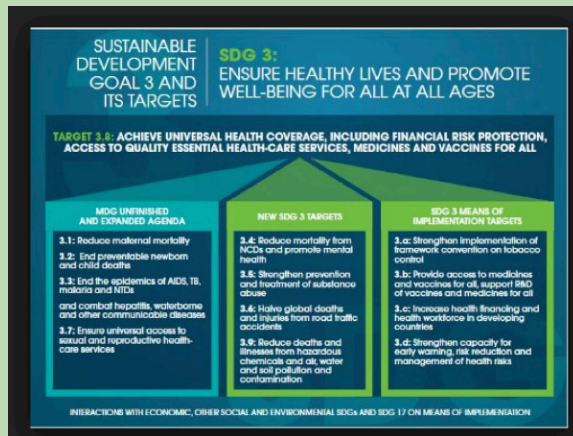
- 5. Give**
Do something nice for someone.


 **www.liveitwell.org.uk**
National research shows that building the 5 ways to well-being into our lives can improve the way we feel





Extra Illustrations





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Live it well. (2017). Mental Health [Digital Image]. Retrieved from <http://www.liveitwell.org.uk/>

Software, P. (n.d.). Healthy Eating Guidelines [Digital Image]. Retrieved from <http://www.hse.ie/eng/about/Who/healthwellbeing/Our-Priority-Programmes/HEAL/Healthy-Eating-Guidelines/>

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World Health Organization India. (n.d.). Sustainable Development Goals (SDGs) [Digital Image]. Retrieved from http://www.searo.who.int/india/topics/sustainable-development-goals/Sustainable_Development_Goals/en/

4 QUALITY EDUCATION



www.un.org/sustainabledevelopment/education

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Unit Authors: Edwin Gómez, Michelle Rivera and David Córdova

United Nations

Sustainable Development Goal 4:

Quality Education

Summary of SDG 4's Content and Intent

United Nations Sustainable Development Goal 4: Quality Education (SDG 4) aims to guarantee universal access to inclusive, equitable quality education worldwide. It further intends to promote meaningful lifelong learning for all. Students should be able to develop their full capacities; they should learn and adopt habits of excellence, which include punctuality, compliance, and responsibility in carrying out their school work to the best of their ability. Quality Education helps students realize their full potential by providing basic knowledge; cognitive, social and emotional skills; creative thinking; problem solving skills; respect for human rights and cultural diversity. Conditions needed in order to ensure the aforementioned include safe schools, textbooks, equipment, water, toilets and electricity, among others.

By 2030 all boys and girls shall complete free, equitable and quality primary and secondary education. Equal access should be given to affordable technical and vocational training as well. By the year 2030, gender and wealth disparities in access to quality education should have been eliminated worldwide.

Children from the poorest households are four times more likely to drop out of school than their wealthier counterparts. Attention must be paid to increasing adult and child literacy rates, and efforts must be made to enroll and retain more girls in school. In addition, a rural and urban disparity in school attendance and completion perpetuates low educational levels in rural areas compared to their urban counterparts.

Poverty, war, conflict, emergencies, child labor and certain cultural norms lead to a high dropout level for children in many parts of the world. In addressing the aforementioned problems, the authors hope that the dropout rates will decrease significantly.

What *awareness* should students have acquired by the end of this teaching unit?

By the end of the teaching unit students should be aware of what constitutes quality education, and what amenities are required in order to help ensure its achievement. They should further know about discrepancies in the quality of education provided within countries and among counties around the world. They should be able to propose ways to enhance the quality of education locally and globally.

What *values and attitudes* should students have developed by the end of this teaching unit?

By the end of the unit, students should be aware of and value the multiplicity of factors required to help ensure top quality education. They should know about the privileging and the marginalization of different societal sectors in terms of education both locally and around the world.

What *skills* should students have developed by the end of this teaching unit?

This particular unit focuses heavily on Constructivist approaches to education where students *learn by doing*. By the end of the chapter they should be able to apply their newfound knowledge and skills to the solution of education-related problems found in their locality.

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What *behaviors and lifestyle choices* should students have adopted by the end of this teaching unit?

This teaching unit is designed to help students become proactive in terms of identifying and understanding problems and challenges found in their locality. They should be able to apply the skills and knowledge acquired toward the betterment of their school, their homes and their community.

What possible *transformative actions* might be put forth to *students' families and communities* by the end of this teaching unit?

It is hoped that students will become agents of change by conversing and organizing

with those around them. In this way, they will promote awareness and they will likely initiate sustainable development activities with peers and community members. In this manner the students and their community will make use of their newfound knowledge in order to solve genuine problems and challenges facing their locality.

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 4

Theme/Topic:

Quality Education

Lesson Outcomes/Objectives:

1. Students will learn what the concept of Quality Education implies
2. Students will understand their own conditions identifying the main factors that influence the quality of education offered in their locality
3. Students will be aware and be prepared to take action designed to enhance the quality of educational opportunities offered in their locality
4. Students will spread the knowledge they acquired with their family and their community

Activities/Tasks:

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1 Introduction to the concept of Quality Education. What constitutes ‘quality education’? Is education of equal quality for all people in all places at all times? What differences are found among and across social groups in your community? In the country? The world? What advantages are enjoyed by children who receive quality education? What disadvantages are faced by children in schools that lack basic aspects required to ensure educational excellence? What can be done about these disparities?

2.1 Begin the class asking students how they feel when they are in class, if they feel bored, angry, sad, happy, enthusiastic, interested, etc.

2.2 Ask them what causes them to feel as they do, exploring – for example – the reasons for them to have a negative or positive attitude toward the class in several moments at school.

2.3 The teacher explains to them the different factors that influence students in their class-

rooms, (health, good nutrition and nourishment, affective support by family or community, environment, safety, etc. (See sources below)

2.4 Brief students about different factors that can impact on their quality of education (See sources).

3.1 With the teacher's help, the group will try to come up with ideas about how to ensure quality education. Ask students about their personal conditions concerning education. Ask how they can improve their quality of education.

4.1 The topic can be better understood by other students, teachers, or guests (such as student's family or official authorities) by making them do different theatrical representations in which students present skits about high quality education, poor educational situations, and ways to improve the quality of education overall. As a final activity the whole group will develop skits that address educational challenges, such as those caused by poor nutrition and nourishment, unsafe environmental conditions, social inequality, limited resources for schools, etc. Other students will assume the role of educational authorities, observing the conditions represented. They will analyze and take actions designed to improve the quality of education according to the problems presented in the skits.

4.2 In groups of three, students will discuss the following topics: How do nutrition, early social experiences, and family support impact on the quality of education? How is education different for different social classes within a community? A country? The world?

5.1 Ask students what is the purpose of education? Once they've brainstormed about the reasons and the objectives for learning, then they could judge the 'quality' by seeing how to best help students fulfill the 'purposes' of education at the highest possible level.

5.2 Students must understand and give ideas of how they believe that quality education can be ensured for all, regardless of economic status, ethnicity, gender, etc.

5.3 Students will provide examples of quality educational programs, and then they will create one (in teams)

Teaching materials: (Readings, audio visuals, illustrations, photos, realia)

E-readings (printed); markers, blackboard, smartphone, computers, projector.

“The Sustainable Development Goals Explained: Quality Education”

<https://www.youtube.com/watch?v=j65FEmRHTzk>

“#EducationCan: Sustainable development begins with education”

<https://www.youtube.com/watch?v=3OdP7bYe5wk>

“Quality Education for All”

<https://www.youtube.com/watch?v=tlunLTtNJk>

“Quality Education for the World We Want”

<https://www.youtube.com/watch?v=scMho9RAeEQ>

“High-Quality Education for Every Child, Every Day”

<https://www.youtube.com/watch?v=slu9W1Qiqeg>

“The effect of pre-primary education on primary school performance”

<http://www.sciencedirect.com/science/article/pii/S0047272708001308>

Key Questions:

- What does ‘Quality Education’ imply or include?
- What is the purpose of education?
- What factors influence or improve the quality of education?
- Mention some factors that have an important impact on the quality of education.
- How can you promote Quality Education?
- Why and what should children learn to be ‘quality’ students, ‘quality’ human beings and ‘quality’ members of society?
- What is the real meaning of quality?
- What is required in order to ensure a quality education for all children in all places at all times?

Assessment: (Teacher, Peer, Self)

Students will be evaluated through a written or oral quiz in which they have to demonstrate that they learned and understood the idea of Quality Education. They must be able to explain the concept to another person.

Students may do a public theatrical representation about Quality Education before peers, their family and their community.

Activities student will apply in his/her personal life.

- Students will try to improve their own learning process by influencing external factors in order to help ensure the highest possible quality of education.
- They will reflect on their own education and how it may be applied in real life. They will discover what the needs of their respective societies are, and how their education is or is not designed to fulfill these needs.

Activities student will apply with his/her community

Students will create and share the information they have learned with their relatives and community members using leaflets, skits, etc. They will discuss and discover options that can best ensure a higher quality education.

Readings & information sources:

- Defining Quality in Education.

<https://www.unicef.org/education/files/QualityEducation.PDF>

- WHO Information Series on School Health

http://apps.who.int/iris/bitstream/10665/63907/1/WHO_HPR_HEP_98.3.pdf

- Impacts of preschool environment upon children's physical activity and sun exposure.

https://ac.els-cdn.com/S0091743505002380/1-s2.0-S0091743505002380-main.pdf?_tid=1e74d69a-a39c-11e7-a9b5-00000aabb0f01&acdnat=1506527838_b929393cf886094c-b84ac43d6a6c8216

- Indigenous peoples and poverty in Latin America: an empirical analysis

<https://www.popline.org/node/294039>

Subject skills utilized:

Language

Humanities

Arts

Computing

Social Studies

Civics

Geography

Partnerships for the goals: (How can we multiply this and link it at the local, national and international levels? i.e. private sector, government, education, civil society, families)

- Give leaflets to people.
 - Publish a video on the internet concerning diverse aspects of quality education and ensuring equal access to the best possible education for all
 - Publish education-related information in the school's magazine or newspaper
 - Create local public events focusing on Quality Education
-

Resources/Organisation:

Quality Education

<https://www.unicef.org/education/files/QualityEducation.PDF>

WHO: Information Series on School Health

http://apps.who.int/iris/bitstream/10665/63907/1/WHO_HPR_HEP_98.3.pdf

Impact of preschool environment upon children's physical activity and sun exposure

Readings

https://ac.els-cdn.com/S0091743505002380/1-s2.0-S0091743505002380-main.pdf?_tid=1e74d69a-a39c-11e7-a9b5-00000aabb0f01&acdnat=1506527838_b929393cf886094c-b84ac43d6a6c8216

[Indigenous peoples and poverty in Latin America: an empirical analysis] Los pueblos indígenas y la pobreza en América Latina: un análisis empírico

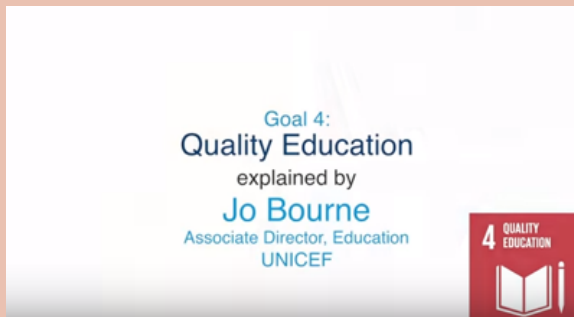
<https://www.popline.org/node/294039>

STUDENT SELF-EVALUATION RUBRIC	
Student's Name:	Kindly provide a brief answer to each question below:
How is Quality Education perceived in my community?	
What is the importance of developing a Quality Education?	
What are the main factors that influence quality education?	
What are the ways in which I can improve education? Name and explain them	

TEACHER TO STUDENT EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
The student understands the factors required to ensure high quality education					
The student demonstrates knowledge of the importance of quality education for children and for society.					
The student is aware of the challenges of developing quality education, globally and in his/her community.					

PEER EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Classmate evaluating:					
My classmate shows an awareness of the factors involved in developing a quality education.					
My classmate understands the importance of developing a quality education for children and for society.					
My classmate can propose ways to improve and ensure quality education for all people in all places at all times.					

Videos



“The Sustainable Development Goals Explained: Quality Education”



“#EducationCan: Sustainable development begins with education”



“Quality Education for All



“Quality Education for the World We Want”



“High-Quality Education for Every Child, Every Day”

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Bibliography:

Duval Schools. (2014). Quality Education for All [Video File] Retrieved from <https://www.youtube.com/watch?v=tlunLTtNJk>

Global Education First Initiative. (2015). #EducationCan: Sustainable development begins with education [Video File]. Retrieved from <https://www.youtube.com/watch?v=3OdP-7bYe5wk>

Global Education First Initiative. (2015). Quality Education for the World We Want. Global Education First Initiative [Video File]. Retrieved from <https://www.youtube.com/watch?v=scMho9RAeEQ>

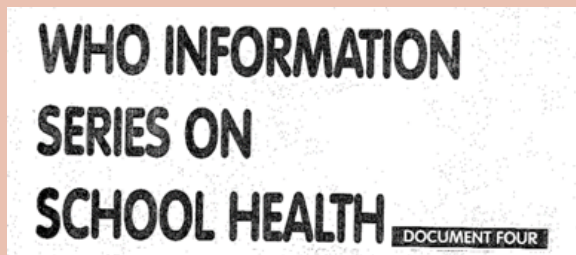
Responsive Classroom. (2014). High-Quality Education for Every Child, Every Day [Video File]. Retrieved from <https://www.youtube.com/watch?v=slu9W1Qiqeg>

United Nations. (2015). The Sustainable Development Goals Explained: Quality Education [Video File]. Retrieved from <https://www.youtube.com/watch?v=j65FEmRHTzk>

Articles



“Impacts of preschool environment upon children’s physical activity and sun exposure”



“WHO Information Series on School Health”

Defining Quality in Education

A paper presented by UNICEF at the meeting of
The International Working Group on Education Florence, Italy
June 2000

Working Paper Series
Education Section
Programme Division
United Nations Children's Fund
New York, NY, USA

“Defining Quality in Education”

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The screenshot shows the POPLINE database interface. At the top, there is a logo for POPLINE by KHealth, a search bar with a magnifying glass icon, and a language selection dropdown. Below the header, there is a navigation bar with links for Advanced Search, Topics, Services, About, and Help. The main content area displays a search result for a document titled "[Indigenous peoples and poverty in Latin America: an empirical analysis] Los pueblos indigenas y la pobreza en America Latina: un analisis empirico." The author is listed as Psacharopoulos G; Patrinos HA. The source is cited as: In: Estudios sociodemograficos de pueblos indigenas, [compiled by] United Nations. Centro Latinoamericano de Demografia [CELADE], Confederacion Indigena del Oriente Boliviano, United Nations Population Fund [UNFPA], Instituto de Cooperacion Iberoamericana. Santiago, Chile, CELADE, 1994 Dec. 417-29. (Serie E No. 40).

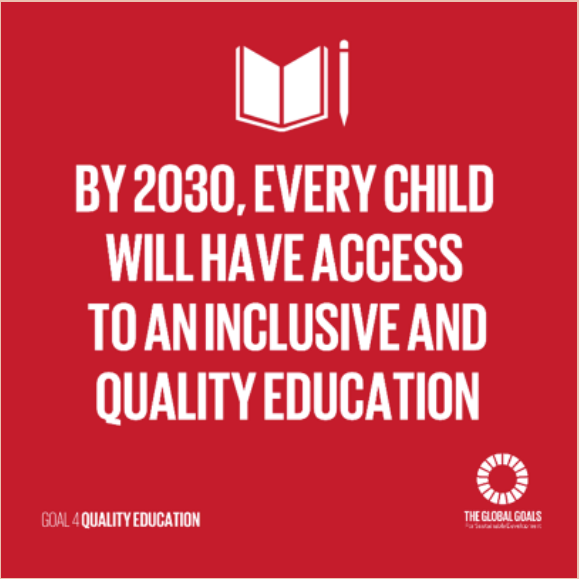
“ [Indigenous peoples and poverty in Latin America: an empirical analysis]Los pueblos indígenas y la pobreza en América Latina: un análisis”

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- Boldemann C. et al. (2006) Impact of preschool environment upon children's physical activity and sun exposure. Retrieved from https://ac.els-cdn.com/S0091743505002380/1-s2.0-S0091743505002380-main.pdf?_tid=1e74d69a-a39c-11e7-a9b5-00000aab0f01&acd-nat=1506527838_b929393cf886094cb84ac43d6a6c8216
- Psacharopoulos G, Patrinos HA. (1994) [Indigenous peoples and poverty in latin America: an empirical analysis] Los pueblos indigenas y la pobreza en América Latina: un análisis empírico. Popline. 1994. Retrieved from <https://www.popline.org/node/294039>
- UNICEF. (2000) Defining Quality in Education. Retrieved from <https://www.unicef.org/education/files/QualityEducation.PDF>
- World Health Organization (1998). Who information series on school health. Retrieved from http://apps.who.int/iris/bitstream/10665/63907/1/WHO_HPR_HEP_98.3.pdf

Illustrations





QUALITY EDUCATION

LEARNING OUTCOMES

It has been estimated that ...



38%
of children are
not learning
the basics in
reading and
mathematics

OVER
ONE-HALF
of them have
spent 4 years
in school



TRAINED & SUPPORTED TEACHERS NEEDED

1.4 MILLION
new primary
teachers needed
in 2015

....and over.....
3.4 MILLION
more needed by 2030

28
COUNTRIES

will not have
enough primary
school teachers
by 2030

Average teacher
salaries are below
US\$10 per day in
8 countries



In $\frac{1}{3}$ of countries with data, less than
 $\frac{3}{4}$ of existing teachers are trained to
national standards

GOOD CONDITIONS NEEDED

SAFE SCHOOLS



TEXTBOOKS



EQUIPMENT



**BASIC
KNOWLEDGE**



**COGNITIVE, SOCIAL
AND EMOTIONAL
SKILLS**



**CREATIVE
THINKING**



**PROBLEM
SOLVING**



**RESPECT FOR
HUMAN RIGHTS**



**CULTURAL
DIVERSITY**



WATER



TOILETS



ELECTRICITY

Bibliography:

Ashwati. (2013). TN School Facilities Raised-Quality Edu'n Stay Low [Digital Image]. Retrieved from <https://www.careerindia.com/news/2013/02/12/tn-school-facilities-raised-quality-education-stay-low-003982.html>

Nasar Khan, H. (2016). Making Sense of Quality Education [Digital Image]. Retrieved from <http://balochistanvoices.com/2016/05/making-sense-of-quality-education/>

The Global Goals. (2017). 4 QUALITY EDUCATION. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all [Digital Image]. Retrieved from <http://www.globalgoals.org/global-goals/quality-education/>

UNESCO (2015). Quality Education [Digital Image]. Retrieved from <https://en.unesco.org/world-education-forum-2015/5-key-themes/quality-education>

5

**GENDER
EQUALITY**



<https://sustainabledevelopment.un.org/sdg5>

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Unit Authors: Edwin Gómez and David Córdova

Sustainable Development Goal 5: Gender Equality

Summary of SDG 5's Content and Intent

United Nations' Sustainable Development Goal 5: Gender Equality (SDG 5) seeks to achieve gender equality and to empower all women and girls. Around the world, persistent patriarchal social norms continue to deprive women and girls of their basic rights on equal footing with men. Legal systems and judicial norms need to continue changing until full *de facto* and *de jure* equality is achieved between the genders.

In familial and intimate partner relationships, physical and sexual violence are frequently exacted on women and, at times, on children. Non-consensual sex may be forced upon women by their intimate partner, and decision making power may be denied to females concerning the use of contraceptives, access to health services and the right to choose what happens to her physical person.

In nearly half of the cases, intentional homicide against women is committed by an intimate partner or by another family member. This stands in stark contrast to an estimated 6% of murders of males being committed by people who are not close to them.

Child marriage and the involuntary wedding of girls to older men continue to be problems in both the developed and the developing world. Though the incidence is dropping, female genital mutilation continues to be prevalent in many parts of the world.

Progress toward equality needs to be made in many areas concerning women and work. Females continue to bear a disproportional burden compared to men in the areas of house-keeping, cooking and child rearing. Unpaid domestic work is a prevalent source of inequality and economic limitations for women. Though slightly more than half of the world population is female, women continue to be severely underrepresented in governance, in private sector management and in public decision making roles in general.

A marked pay gap endures, where men around the world are paid significantly more than women for the same work. In addition to limiting women's freedom and purchasing power, the gender pay gap has negative effects on children, since women may dedicate a larger percentage of their income to the children than their male counterparts. While progress is being made to close the gender gap, patriarchal attitudes and the domination of women by men have been the norm from time immemorial. As such, it will be a challenge to reach full gender equality by 2030 as proposed by SDG 5.

What awareness should students have acquired by the end of this teaching unit?

Gender relations favoring males over females have been prevalent for millennia. This intergenerational normalized inequality often escapes people's awareness because it is seen simply as 'the way things are,' or 'the way things should be.' Furthermore, narratives of 'what it means to be a virtuous woman' constitute societal norms that implicitly constrain females and subordinate them to ancient, ever-prevalent patriarchal norms. By the end of this unit students should be able to see the internalized structuring mechanisms that have kept women in a subordinate role to men throughout the ages.

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What values and attitudes should students have developed by the end of this teaching unit?

By the end of the unit, students should understand that gender equality is in the interest of all. Women should be accorded the same respect as men, and students of both genders should uphold this fundamental value in both their attitudes and their actions.

What skills should students have developed by the end of this teaching unit?

Students of both genders should have the skills and the willingness to carry out tasks that have been traditionally gender-marked. For example, males should be able and willing to carry out household chores, while women should be capable of conducting tasks in the public sphere that have traditionally been delegated to men.

What behaviors and lifestyle choices should students have adopted by the end of this teaching unit?

Irrespective of gender, students should begin to adopt a lifestyle where both domestic and public work are carried out with equal willingness and ability by all.

What transformative actions might be put forth to students' families and communities by the end of this teaching unit?

Students will help raise awareness of persisting gender inequalities in their peer groups, their homes and their communities. They should become role models for genuine respect across the genders and for an equal sharing of work by males and females.

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LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 5

Theme/Topic:

Gender Equality

Lesson Outcomes/Objectives:

1. Students will learn the definition of Gender Equality.
2. Students will learn some historical facts regarding Gender Equality.
3. Students will understand some negative impacts of gender inequality on society, on children, women, national and international economies.
4. Students will generate ideas to contribute to the goal of Gender Equality in their community, town, city, country, and the world.

Activities/Tasks:

1.1 The teacher starts the class by asking students their opinion on Gender Equality.

(You may wish to organize an informal debate or discussion about how someone would feel discriminated due to his or her gender in a hypothetical situation. The class will discuss and individuals write a personal definition of “gender inequality.”

1.2 Give students a complete definition of Gender Equality (See sources below)

2.1 Brief students about historical events concerning Gender Equality (see sources).

3.1 Discuss the negative repercussions of Gender Inequality. Share your own personal experiences and asks students if they would like to share their experiences or opinions about the topic. Males and females alike should be asked to share their personal experiences and/or situations they may have observed.

3.2 Tell students about facts and the impacts regarding the consequences of Gender Inequality in different countries.

4.1 Organize a brainstorming activity in which all students, individually or in groups, come up with personal ideas to increase Gender Equality in their surroundings. They can promote their ideas by putting them on a mural, giving leaflets to people, publishing a video on a YouTube-like webpage or any other way students feel convenient.

4.2 Students will brainstorm a hypothetical ‘world’ where the genders are genuinely equal, i.e. in terms of raising children, household responsibilities, equal pay, equal numbers of males and females in genuine positions of power, etc.

Teaching materials: (Readings, audio visuals, illustrations, photos, realia)

E-readings (or printed e-readings), markers, blackboard, Smartphone, computer, projector.

“Gender Equality”

<https://www.youtube.com/watch?v=j85fGU3PeeY>

“Calling for Gender Equality in Education”

<https://www.youtube.com/watch?v=RQ669Y-SAFg>

“Gender Equality: the power of change”

<https://www.youtube.com/watch?v=OIsvVZCB3KM>

“Gender Equality: Now”

<https://www.youtube.com/watch?v=4viXOGvvu0Y>

“An Introduction to Gender Equality In Education” <https://www.youtube.com/watch?v=7W4l4zpPQOs>

Key Questions:

- What is Gender Equality?
- What are the impacts of Gender Inequality on women? On families? On societies? On the local and global economies?
- What historical facts do you know about Gender Equality?
- How can you promote Gender Equality?
- What lifestyle changes can you make to promote gender equality in your immediate environment?

Assessment: (Teacher, Peer, Self)

Students will be evaluated through a written or an oral quiz, or in teams in which they have to each develop a key question and record it to upload it on the internet (optional). They may also develop a skit representing a situation of Gender Inequality using satire (optional).

Activities student will apply in his/her personal life.

- Students will do a self-reflection in order to identify and improve their own ideology, attitudes and behaviors regarding gender equality.

Activities student will apply with his/her community.

- Students will share what they have learned about gender equality with their family, friends and community. They will disseminate the information they have learned with the people with whom they interact, (For example, using pamphlets, infographics, etc.).

Readings & information sources:

- ABCs of Women Workers' Rights and Gender Equality

http://www.ilo.org/wcmsp5/groups/public/---dgreports/---gender/documents/publication/wcms_087314.pdf

- The Impacts of Gender Inequality in Education on Economic Growth in Turkey

http://ac.els-cdn.com/S1877042813038822/1-s2.0-S1877042813038822-main.pdf?_tid=5435b52e-9d93-11e7-8650-00000aacb35e&acdnat=1505864355_bd3f4fda6b-67f2840ebeba3fad2e0390

- The Women's Timeline <https://www.mmu.ac.uk/equality-and-diversity/doc/gender-equality-timeline.pdf>

- 12 Steps to Achieve Gender Equality in Our Lifetimes

<https://www.theguardian.com/global-development-professionals-network/2016/mar/14/gender-equality-women-girls-rights-education-empowerment-politics>

Subject skills utilized:

Social Studies

Language

Geography

History

Arts

Computing

Civics

Partnerships for the goals: (How can we multiply this and link it at the local, national and international levels? i.e. private sector, government, education, civil society, families)

- By giving leaflets to people.
- Publishing a video on internet
- Publishing the information in the school's magazine or newspaper

Resources/Organisation:

International Labour Office. The ABCs of women workers' rights and gender equality. pp. 91-92. Geneva. 2007. http://www.ilo.org/wcmsp5/groups/public/---dgreports/---gender/documents/publication/wcms_087314.pdf Accessed September 19, 2017.

The Women's Timeline.

<https://www.mmu.ac.uk/equality-and-diversity/doc/gender-equality-timeline.pdf>

Yumusak, I. G., Bilen, M., Ates, H. The Impacts of Gender Inequality in Education on Economic Growth in Turkey. pp. 1. Elsevier Ltd.

http://ac.els-cdn.com/S1877042813038822/1-s2.0-S1877042813038822-main.pdf?_tid=5435b52e-9d93-11e7-8650-00000aacb35e&acdnat=1505864355_bd3f4fda6b-67f2840eb3fad2e0390

12 steps to achieve gender equality in our lifetimes.

<https://www.theguardian.com/global-development-professionals-network/2016/mar/14/gender-equality-women-girls-rights-education-empowerment-politics>

STUDENT SELF-EVALUATION RUBRIC	
Student's Name:	Kindly provide a short answer below
How is gender equality perceived in my community?	
What is the importance of fostering gender equality?	
What are the main negative impacts of gender inequality?	
What are the ways in which I can improve gender equality? Name and explain them.	

TEACHER TO STUDENT EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
The student knows about the concept of Gender Equality					
The student demonstrates knowledge of the detrimental impacts of Gender Inequality					
The student is aware of some historical facts regarding Gender Equality					
The student is aware of the importance of Gender Equality					

PEER EVALUATION RUBRIC					
Student evaluating:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Student evaluated:					
My classmate showed an interest in the importance of improving gender equality.					
My classmate shows an awareness of the negative impacts of gender inequality.					
My classmate can explain the importance of gender equality.					
My classmate now knows how to improve gender equality in our locality.					



“Calling for Gender Equality in Education”
by GEM Report UNESCO (2015)



“An Introduction to Gender Equality In Education”

Bibliography:

- GEM Report UNESCO. (2015). Calling for Gender Equality in Education [Video File]. Retrieved from <https://www.youtube.com/watch?v=RQ669Y-SAFg>
- IPPF. (2015). Gender Equality: the power of change [Video File]. Retrieved on from <https://www.youtube.com/watch?v=OIsyVZCB3KM>
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- United Nations Girls' Education Initiative. (2012). AN INTRODUCTION TO GENDER EQUALITY IN EDUCATION BY EAP UNGEI [Video File]. Retrieved from <https://www.youtube.com/watch?v=7W4l4zpPQOs>
- WorldFish (2014). Gender Equality: Now [Video File] Retrieved on from <https://www.youtube.com/watch?v=4viXOGvvu0Y>

Articles

ABC of women workers' rights and gender equality

Second edition

The Women's Timeline

1860s to 1890s

1867 The London Society for Women's Suffrage is formed to campaign for female suffrage. (www.learningcurve.gov.uk)

1870 The Married Women's Property Act allows married women to own their own property. Previously, when women married, their property transferred to their husbands. Divorce heavily favoured men, allowing property to remain in their possession. This act allows women to keep their property, married, divorced, single or widowed. (www.channel4.com)



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- International Labour Office (2007). ABC of women workers' rights and gender equality. Retrieved from http://www.ilo.org/wcmsp5/groups/public/---dgreports/--gender/documents/publication/wcms_087314.pdf
- Leach Anna. (2016). 12 steps to achieve gender equality in our lifetimes. Retrieved from <https://www.theguardian.com/global-development-professionals-network/2016/mar/14/gender-equality-women-girls-rights-education-empowerment-politics>
- MMU.AC.(n.d.). The Women's Timeline. Retrieved from <https://www.mmu.ac.uk/equality-and-diversity/doc/gender-equality-timeline.pdf>
- Yumusak, I. G et al. (n.d.). The Impacts of Gender Inequality in Education on Economic Growth in Turkey. Retrieved from http://ac.els-cdn.com/S1877042813038822/1-s2.0-S1877042813038822-main.pdf?_tid=5435b52e-9d93-11e7-8650-00000aacb35e&acdnat=1505864355_bd3f4fda6b67f2840ebeba3fad2e0390

5 GENDER EQUALITY



Goal 5: Achieve gender equality and empower all women and girls



Gender equality and education debate

Gender Equality



In 2009-2010, average superannuation payouts for women were **just over half (57%)** those of men.



WOMEN ON THE BOARDS OF ASX 200 LISTED COMPANIES HAS GROWN FROM



women aged 15 years & over have experienced physical violence in the last five years



women have experienced physical violence since the age of 15



women have experienced sexual violence since the age of 15

1 in 2

mothers reported experiencing workplace discrimination as a result of their pregnancy, parental leave or on return to work, while

1 in 5

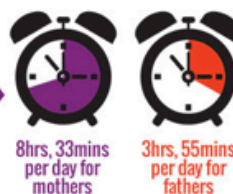
mothers indicated that they were made redundant, restructured, dismissed, or that their contract was not renewed



Australian women account for:

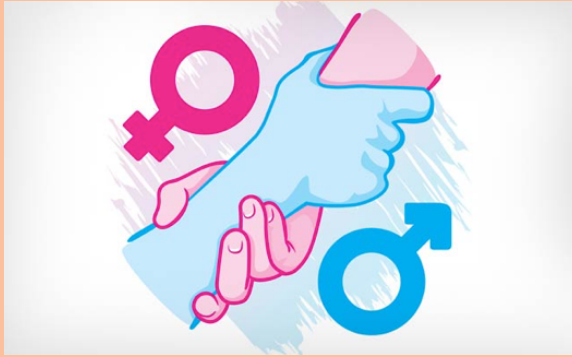
- ▶ 92% of primary carers for children with disabilities
- ▶ 70% of primary carers for parents
- ▶ 52% of primary carers for partners

Mothers spend more than twice as many hours each week looking after children compared to fathers

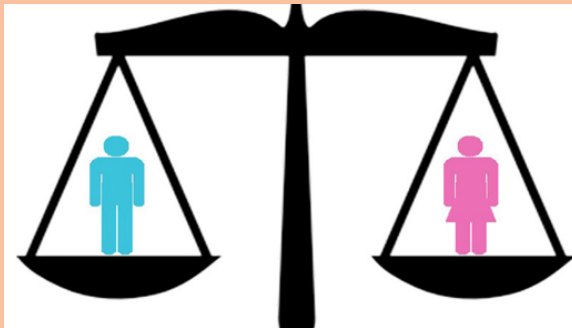


Domestic and family violence is the leading preventable cause of death, disability and illness in women aged 15 to 44 yrs.

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Online Course: Engaging Men and Boys in Gender Equality Programming



Gender Equality a dogma!

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6

CLEAN WATER AND SANITATION



<http://www.un.org/sustainabledevelopment/water-and-sanitation/>

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Unit Author: Cristian López

Sustainable Development Goal 6: Clean Water and Sanitation

SDG 6's Content and Intent

The aim of United Nations' Sustainable Development Goal 6: Clean Water and Sanitation (SDG 6) is to ensure the availability and the sustainable management of water and sanitation for people around the world. Water scarcity, or the lack of sufficient hydrological resources to meet human water needs is a growing problem around the world. Approximately 39% of the world's population faces a situation of water scarcity during some period each year, while nearly 17% of the total world population lacks access to clean drinking water. Water scarcity and shortages are exacerbated by climate change – as droughts, floods, water pollution and increased human demand lead to overuse and to the ongoing degradation of existing sources of fresh water. When human demand exceeds the amount of potable water available, the resulting overuse leads to the depletion of freshwater and groundwater sources. Each of us can help solve water depletion problems by reducing our demand for this vital liquid, and by reusing it whenever possible; we can also look for alternative forms of freshwater capture for household, agriculture and industrial consumption. In addition, wastewater and seawater can be treated in order to make it fit for human consumption and for agricultural and industrial uses.

One alternative to extraction from freshwater and groundwater sources involves the capture and harvest of rainwater. Looking something like a mesh billboard, 'fog catchers' and other devices capture and condense atmospheric moisture. Upon collection, the water is sent through a filtering system for purification and eventual usage. Other systems include desalination plants that extract the salts from sea water to make it fit for various forms of human usage. Wastewater treatment facilities capture, clean and purify used water, making it available once again to meet our demand. These and other emerging technologies aim to increase and perpetuate the ongoing supply of potable water destined for human consumption.

The term 'water sanitation' refers to the processes involved in making clean and safe water available for all. Among other concerns, SDG 6 calls for the elimination of open defecation, while paying special attention to the sanitation and hygiene needs of women, girls, and other groups in situations of vulnerability. Water quality and sanitation can be improved by reducing

the release of hazardous chemicals and materials into water systems, eliminating dumping and reducing the pollution of water sources. Hygiene and sanitation can be increased greatly through the reduction of standing untreated wastewater, as we seek to increase water recycling and safe water reuse for peoples around the globe.

Experts note that the achievement of SDG 6 paves the way for reaching several of the other sustainable development goals. For example, hygienic toilets and safe drinking water increase a society's productivity by protecting people from water borne diseases. Clean water and sanitation enhance education (SDG 4) and employment (SDG 8) by allowing people to attend school and to work without disruption. Both education and employment are necessary for alleviating poverty. In terms of water reuse, the recovery of nutrients embedded in human waste, in addition to the reusable water and energy, can contribute to sustainable consumption and production as expressed in SDG 12. Successful management of wastewater and sanitation further contributes to SDG 11: Sustainable Cities and Communities, among others.

What *awareness* should students have acquired by the end of this teaching unit?

By the end of this unit, students should be aware of the challenges of water scarcity and overuse, with the accompanying tendency toward fresh and groundwater source depletion. These processes lead to the dire need for water conservation. Students will be familiar with emerging freshwater capture technologies, as well as methods for wastewater treatment and water reuse. In addition, they will understand the need to ensure ongoing, affordable access to clean water and sanitation as a prerequisite for achieving other of the Sustainable Development Goals.

What *values and attitudes* should students have developed by the end of this teaching unit?

Students should begin to develop habits of water conservation. They should be well aware of how human waste, rubbish and pollution have adverse effects on our water supply which, in turn, reverts back to the human community in the form of health and water scarcity problems. Both water conservation and the desire to keep water sources clean and safe are values and attitudes which will emerge by the end of the present unit.

What *skills* should students have developed by the end of this teaching unit?

Students will have the skills that enable them to take concrete steps toward conserving water and ensuring the cleanliness of our freshwater sources.

What *behaviors and lifestyle choices* should students have adopted by the end of this teaching unit?

Students will make lifestyle changes in relation to amounts of water that they consume in their daily lives. They will be aware of and take concrete steps to ensure the cleanliness and safety of water in their homes, at wastewater sites and in freshwater sources in and around their communities.

What possible *transformative actions* might be put forth to *students' families and communities* by the end of this teaching unit?

Students will dialogue with family, friends and community members about water scarcity and overuse. They will inform others about emerging technologies aimed at freshwater capture, treatment, recycling and reuse. They will encourage members of their households to develop habits of water conservation, as well as educating others about the need and the ways to help keep freshwater sources clean and safe within their communities.

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 6

Theme/Topic:

Clean water as a need for our society and for the environment

Lesson Outcomes/Objectives:

1. Students will be able to identify the hydrographic features of their communities
 2. Students will learn to value water as a necessity for any type of living being
 3. Students will learn the importance of hygiene and clean water
 4. Students will learn different ways to sanitize water
 5. Students will become aware of emerging technologies and different ways to obtain water
-

Activities/Tasks:

1.1 The teacher will provide relevant and reliable information resources (i.e. books, internet, firsthand information, etc.) to identify a valuable water body near the school, the neighbourhood or the community. Field trips and nature study tours may be organized wherein students acquire direct experience in the identification and the study of various water bodies in the community. Students will draw a map and identify in it the location of the body or bodies of water.

1.2 Students are required to search for the most important bodies of water in their country with available information resources.

2.1 Students will think of all the things that they use water for, and make a list of them, as well as all the places where water can be found. Where does our water come from? What functions does it serve? (Provide sustenance, host an ecosystem, irrigate plants, etc.). This activity will be conducted with the aid of the teacher.

2.3 Watch video “Why care about water?”

2.4 Hold a group discussion on the impact of water in life and the role of the human species in the water cycle.

2.5 Reading: “What can you do?” (Kindly refer to the reading below).

3. Watch Video “SDG 6 – Clean Water and Sanitation – Ted Talks.” Discuss and write down the main reasons to protect clean water and promote sanitation as illustrated in the video.

4.1 In teams, think of a contingency scenario and try to imagine whether water will be available in that scenario. If so, would the water be drinkable and safe? If not, what steps can be taken to ensure water availability, safety and hygiene?

4.2 Reading “Water quality” (Kindly refer to the reading below).

4.3 Students make a water filtration system by themselves and filter water with it.

4.4 Video: The solution to water pollution (Kindly refer to the video below)

5.1 Students will think of places in their communities where water procurement is a hard task for the people living there. They will try to develop a way to help them get water, making a drawing or writing a description about it.

5.2 Videos: “Harvesting Water From the Sky in Arid Peru” and “Warka Water Towers harvest drinkable water from the air”

Teaching materials: (Readings, audio visuals, illustrations, photos, realia)

“Why care about water?” <https://www.youtube.com/watch?v=Fvkzjt3b-dU>

“What can you do?” <http://www.water-pollution.org.uk/preventingyou.html>

“SDG 6- Clean Water and Sanitation- Ted Talks” <https://www.youtube.com/watch?v=U5TxygvcmU8>

“Water quality” <http://www.fondriest.com/environmental/measurements/parameters/water-quality/>

“The solution to water pollution” <https://www.youtube.com/watch?v=6Hjlj73zUF0>

“Harvesting Water From the Sky in Arid Peru” <https://www.youtube.com/watch?v=bqZw-1MqISvM>

“The Sustainable Development Goals Explained: Clean Water and Sanitation” <https://www.youtube.com/watch?v=LCKsU4bPFOQ>

Key Questions:

What is the role of water on our planet?
 How is water important in our everyday lives?
 What are some important sources of water procurement?
 How is water used in the home, in industry and agriculture?
 What can I do to preserve water?
 How can we ensure that it is clean and safe?

Assessment:

Kindly see the Teacher, Peer and Self-assessment rubrics below

Activities student will apply in his/her personal life.

Please refer to reading “What can you do?” below

Activities student will apply with his/her community

Awareness activities with neighbors and active patrolling of water usage and resources as community members go about their normal activities

Readings & information sources:

<https://www.youtube.com/watch?v=FvkJzt3b-dU>

Subject skills utilized:

Geography
 Biology
 Natural Science
 Social Studies
 Civic and Ethics

Partnerships for the goals: (How can we multiply this and link it at the local, national and international levels? i.e. private sector, government, education, civil society, families):

With the filter students made in school, ask them to use it at home. Encourage them to teach their friends and neighbors how to build and use one

Resources/Organisation:

How to filter radiation from water <http://www.buzzle.com/articles/how-to-filter-radiation-from-water.html>

Goal 6—Rising to the Challenge: Enabling Access to Clean and Safe Water Globally
<https://unchronicle.un.org/article/goal-6-rising-challenge-enabling-access-clean-and-safe-water-globally>

Progress of Goal 6 in 2017 <https://sustainabledevelopment.un.org/sdg6>

Organization:

The Water Pollution Guide <http://www.water-pollution.org.uk/>

World Health Organization <http://www.who.int/en/>

STUDENT SELF-EVALUATION RUBRIC

Student’s Name:

Kindly provide brief answers to the questions below.

What are the sources of water in my community?

What is the value of clean water for our community? How is it used? What would we do without it?

What are the good sanitation conditions I have? / What are the sanitation deficits I have?

Which are the ways in which I can access clean water if/when unavailable? Name and explain them.

TEACHER TO STUDENT EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
The student knows about the sources of water in his/her community					
The student demonstrates knowledge of the importance of water					
The student is aware of the challenges of providing clean water and sanitation globally and in his/her community					
The student is aware of the importance of clean and drinkable water					

PEER EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Classmate evaluating:					
My classmate shows an interest in conserving our community's water sources					
My classmate shows an awareness of the role of water in the environment					
My classmate can explain the importance of clean water and sanitation					
My classmate now knows how to procure and conserve water for his/her family and community					

Videos



“Why care about water”?



SDG 6- Clean Water and Sanitation- Ted Talks”

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“The solution to water pollution”



“The Sustainable Development Goals Explained: Clean Water and Sanitation”



“The Water Cycle”

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- Dezeen. (2016). Warka Water Towers harvest drinkable water from the air [Video File]. Retrieved from <https://www.youtube.com/watch?v=THJlVuinPbc0>
- Let's Change. (2017). SDG 6- Clean Water and Sanitation- Ted talks [Video File]. Retrieved from <https://www.youtube.com/watch?v=U5TxygvcmU8>
- Makeshift. (2015). Harvesting Water From the Sky in Arid Peru [Video File]. Retrieved from <https://www.youtube.com/watch?v=vqZw1MqISvM>
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- National Science Foundation (2013). The Water Cycle [Video File]. Retrieved from <https://www.youtube.com/watch?v=al-do-HGUlk>

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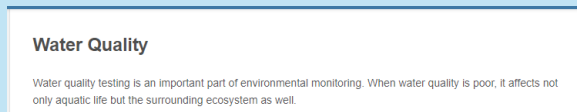
Articles



“What can you do?”



“A Primer on Water Quality”



“Water Quality”

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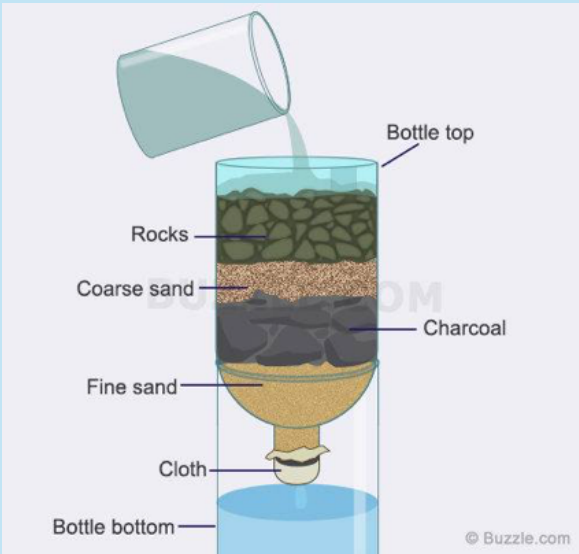
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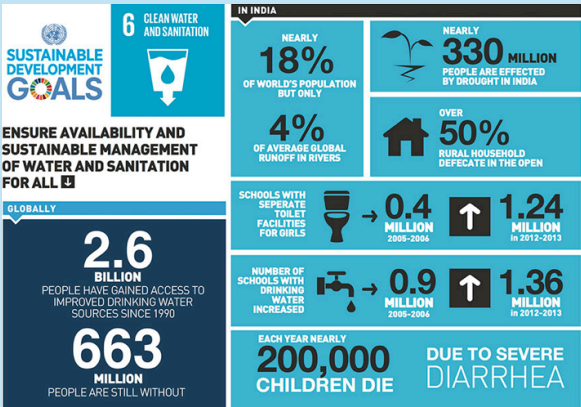
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Illustrations



Homemade water filter



Clean Water and Sanitation



Holistic Water Goal



Clean Water and Sanitation



Clean Water and Sanitation

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Global Goals (n.d). Clean Water Sanitation [Digital Image]. Retrieved from <http://www.globalgoals.org/global-goals/clean-water-sanitation/>

UN Water. (2016). Holistic Water Goal [Digital Image]. Retrieved from <http://www.unwater.org/full-picture-holistic-water-goal/>

United Nations India (n.d.). Clean Water and Sanitation [Digital Image]. Retrieved from <http://in.one.un.org/page/sustainable-development-goals/sdg-6/>

United Nations. (n.d.). Water and Sanitation [Digital Image]. Retrieved from <http://www.un.org/sustainabledevelopment/water-and-sanitation/>

7 AFFORDABLE AND CLEAN ENERGY



<https://sustainabledevelopment.un.org/sdg7>

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Unit Author: Javier Pichardo

Sustainable Development Goal 7: Affordable and Clean Energy

SDG 7's Content and Intent

United Nations Sustainable Development Goal 7: Affordable and Clean Energy (SDG 7) seeks to ensure access to modern, sustainable, affordable and reliable energy services for all people everywhere. Targets to be achieved by or before 2030 include providing universal access to reliable modern energy systems, increasing renewable energy sources in the global energy mix, improving energy efficiency, providing access to clean energy research and technology, investing in clean energy, efficient infrastructure and technology, and supplying sustainable energy services for all people in all places.

Traditional sources of energy production include coal, natural gas and petroleum. These fossil fuels have formed under the Earth's surface through the decomposition of dead organisms containing energy derived from photosynthetic processes that occurred millions of years ago. Fossil fuels contain high percentages of carbon, so when they are burned to create energy, the carbon emissions released contribute alarmingly to atmospheric pollution and global warming.

Nuclear energy is found in the force that holds together the nuclei of atoms, which are the basic building blocks of all matter found on Earth. In nuclear power plants, nuclear fission is used to create energy by splitting atoms. This process releases vast amounts of energy which is then captured to generate electricity. Emitting very small levels of greenhouse gases, nuclear energy production is essentially a clean process compared to emissions generated through the combustion of coal, oil or gas. However, there is a disaster risk potential if overheated nuclear fuels escape the reactor into the natural environment. In addition to catastrophic environmental damage, human exposure to high amounts of radiation can cause death, disfiguration and/or illnesses, such as cancer, leukemia, etc.

Renewable energy comes from sources which are naturally replenished, like waves, tides, rain, wind, sunlight and geothermal heat. Energy obtained from *biomass* comes from burning organic material – such as straw, wood, manure, sugarcane, etc. – that has stored sunlight in

the form of chemical energy. These fuels generate energy through biomass combustion, which releases carbon emissions. In spite of the emissions, they are classified as a renewable energy sources, since the plants used in energy production can be replaced by growing more plants.

Biofuel produces energy through biological processes, such as anaerobic digestion as opposed to burning fuel produced through non-renewable geological processes – as in the case of petroleum and natural gas. *Wind power* utilizes the flow of air through wind turbines to power generators that produce electric power; this is a clean, plentiful renewable and widely distributed source of energy that does not produce greenhouse gases. *Hydropower* is a clean and renewable energy source that utilizes fast running water to power turbines which, in turn, produce energy. *Solar energy* comes from capturing the radiant light and the heat from the sun for generating electricity, heating homes and other useful purposes. *Geothermal energy* comes from heat sources that are stored in the Earth. It can be utilized, for example, by harnessing the steam from geysers to generate heat and electrical power. *Tidal energy* capture is a form of hydropower that converts the energy from sea and oceanic waves into electricity. Scientists around the world are currently developing these and other ‘green technologies’ in the hopes of guaranteeing a clean and renewable energy future for the planet.

What awareness should students have acquired by the end of this teaching unit?

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By the end of the teaching unit, students should have a general awareness of the energy situation of communities and countries around the world. They will have a basic understanding of how energy is created using ‘traditional’ sources – such as fossil fuels and nuclear power. They will know the advantages and the risks of the conventional forms of energy production. Students will understand the carbon cycle and how carbon stored in natural elements is released in the process of producing energy through traditional sources, thereby exacerbating the process of global warming.

Students will be familiar with renewable and clean sources of energy, and how each of these emerging technologies works. They will know the basic premises of SDG 6 and the targets that are to be met by the year 2030 or before.

What values and attitudes should students have developed by the end of this teaching unit?

Students should understand the need for energy conservation which they will practice in their school, homes and families. Their awareness of the dangers of conventional energy sources should lead them to value renewable and clean sources of energy production.

What skills should students have developed by the end of this teaching unit?

By the end of the unit students will know how to create simple power generators using renewable sources, such as flowing water, wind, tidal energy and so on. They should be able to name several sources of clean and renewable energy and to provide a basic explanation of how each one functions.

What behaviors and lifestyle choices should students have adopted by the end of this teaching unit?

Students should adopt behaviors oriented toward energy conservation in all spheres of their lives. They should show a preference for, and a basic knowledge of renewable and clean energy sources.

What possible transformative actions might be put forth to students' families and communities by the end of this teaching unit?

In formal dialogue sessions and informal conversations, students will share their knowledge about advantages and disadvantages of different energy options with family, friends and community members. They will provide a basic explanation of how each energy-production technology functions. Students will make lifestyle changes toward reducing their energy consumption, while showing a preference for the use and adaptation of clean and renewable energy technologies.

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 7

Theme/Topic:

Affordable and Clean Energy

Lesson Outcomes/Objectives:

Students will:

1. Reflect on the impact that different energy sources could have on our lives
 2. Propose ideas relating the global challenges that the world faces concerning Affordable and Clean Energy
 3. Understand the advantages and disadvantages of the diverse energy sources
 4. Reflect on and understand which energy sources would be the most appropriate for the students' region
-

Activities/Tasks:

1. Reflect on the impact that the different energies sources could have on our lives.

1.1 Students will have an open discussion about their knowledge of non-renewable and renewable energy sources.

1.2 The teacher and students will watch and discuss the videos “Renewable Energy Explained in 2 ½ Minutes” and “Renewable Energy 101” (See sources below).

1.3 Students will go outside the classroom to investigate and take notes on the knowledge of other people concerning energy sources.

1.4 Non-renewable Energy Sources. The students will watch and reflect with the teacher on the videos “Fossil Fuels 101”, “Coal 101”, “Natural Gas 101” and “Oil 101” (See sources below).

1.5 Renewable energy sources. The students will watch and reflect with the teacher on the videos “Wind Power 101”, “Water 101”, “Hydropower 101”, “Tidal Power 101”, “Solar 101”, “Solar Photovoltaics 101”, “Solar Thermal 101”, “Biomass 101”, “Nuclear 101” and “Geothermal 101” (Below).

1.6 Each student will create a mind map about the energy sources; he or she will present about his/her preferred source in front of the class.

2. Students will reflect and propose ideas relating the global challenges for Affordable and Clean Energy that the world faces today.

2.1 The teacher and students will watch and discuss the video “SDG 7 Affordable and Clean Energy.” The reading “SDG 7– Ensure access to reliable, sustainable and affordable energy for all;” and the Mind Map of SDG 7 to reflect on the global challenges faced in trying to ensure Affordable and Clean Energy for all.

2.2 Students will ask in their homes, schools, on the street, etc. what the people know, and what they think about Affordable and Clean Energy.

2.3 Students will draw and create posters explaining the challenges concerning Affordable and Clean Energy that the world faces today. They will discuss the matter with their families and classmates.

3. Understand the advantages and disadvantages of the different energy sources.

3.1 Students will create posters explaining the advantages and disadvantages of *renewable* and *non-renewable* energy sources and will present them, preferably in other classes and at home.

3.2 The posters will be placed in different locations around the school and the classroom.

4. Reflect and decide which energy sources would be the most appropriate for the locality.

4.1 In teams or with the whole class, students will reflect on and present the characteristics of the region. The teacher will write them on the board and answers will be discussed with the students.

4.2 Based on the characteristics of the region, individually or in teams, the students will present the energy sources that they consider most adequate for the region. The presentation should include: The name of the energy source, the pros and cons, why that energy source would be the most adequate, where they would locate it (a point near the city that they could use).

4.3 If possible, students will present their clean energy proposals to a school authority – like the principal, and to their parents.

Teaching materials: (Readings, audio visuals, illustrations, photos, realia)

- “What is Solar Power?” <https://video.nationalgeographic.com/video/101-video-shorts/what-is-solar-power?source=searchvideo>
 - “Renewable Energy 101” <https://video.nationalgeographic.com/video/101-videos/renewable-energy-101>
 - “Alternative Energy” <https://video.nationalgeographic.com/video/alternative-energy?-source=searchvideo>
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- “Energy Conservation” <https://video.nationalgeographic.com/video/energy-conservation?source=searchvideo>
 - “The future of clean-energy” <https://www.youtube.com/watch?v=jPLiUm9Rp9k>.
 - “Can 100% renewable energy power the world? - Federico Rosei and Renzo Rosei” <https://www.youtube.com/watch?v=RnvCbquYeIM>
 - “A guide to the energy of the Earth - Joshua M. Sneideman” <https://www.youtube.com/watch?v=fHztd6k5ZXY&t=44s>
 - “How do solar panels work? - Richard Komp” <https://www.youtube.com/watch?v=xKx-rkht7CpY>
 - “Wave and Tide Energy for Prize Money” <https://video.nationalgeographic.com/video/news/saltire-prize-vin?source=searchvideo>
 - “Iowa Wind Power” <https://video.nationalgeographic.com/video/wind-power?source=searchvideo>.
 - “Solar Powered Water Heaters” <https://video.nationalgeographic.com/video/culhane-solar-wc?source=searchvideo>
 - “Solar Cooking” <https://video.nationalgeographic.com/video/solar-cooking?source=searchvideo>
 - “Solar Roads: Can Streets Become Giant Solar Panels?” <https://video.nationalgeographic.com/video/news/160310-solar-road-france-vin?source=searchvideo>
 - “India: The Power of Pine Needles” <https://www.youtube.com/watch?v=mzMoGYbJmVs>
 - “Nuclear Power in the 21st Century – IAEA” <https://www.youtube.com/watch?v=8D1S-VKjTJE4>
 - “Iceland: Geothermal Energy” <https://www.youtube.com/watch?v=ij6h97f3wt4>
 - “VIDEO: Sustainable Energy For All Forum-Clean and affordable energy for all – How are countries doing?” <http://www.un.org/sustainabledevelopment/blog/2017/04/sustainable-energy-for-all-forum-clean-and-affordable-energy-for-all-how-are-countries-doing/>
 - “DSG 7– Ensure access to affordable, reliable, sustainable and affordable energy for all” (<http://www.mdgmonitor.org/sdg7-ensure-access-to-affordable-reliable-sustainable-and-modern-energy-for-all/>).
 - <https://sustainabledevelopment.un.org/content/sdgs/large/Goal-7.jpg>
-

Key Questions:

- What is the impact of the energy sources in my life?
- What are the advantages of renewable energy compared to non-renewable energy?
- How can I apply the idea of clean energy in my region and immediate surroundings?

Assessment: (Teacher, Peer, Self)

(Please see the assessment rubrics below)

Activities the student will apply in his/her personal life.

- Students can comprehend, develop and discuss the advantages of *Renewable and Affordable Energy Sources* as something tangible and attainable for their community.
- Each student will keep an Energy Diary, drawing and counting the houses or buildings with renewable energy. He or she will also write about ways to gradually promote the shift to clean energy in the locality.

Activities student will apply with his/her community.

- Explain and present the advantages that Affordable and Clean Energy can bring to the community.
- Work to plant the seeds of awareness among family, friends and community members.
- Explain and present about challenges the world faces today in the area of Affordable and Clean Energy.

Readings & information sources:

- “What is Solar Power?” <https://video.nationalgeographic.com/video/101-video-shorts/what-is-solar-power?source=searchvideo>
 - “Renewable Energy 101” <https://video.nationalgeographic.com/video/101-videos/renewable-energy-101>
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 - “Energy Conservation” <https://video.nationalgeographic.com/video/energy-conservation?source=searchvideo>
 - “The future of clean-energy” <https://www.youtube.com/watch?v=jPLiUm9Rp9k>.
 - “Can 100% renewable energy power the world? - Federico Rosei and Renzo Rosei” <https://www.youtube.com/watch?v=RnvCbquYeIM>
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- “A guide to the energy of the Earth - Joshua M. Sneideman” <https://www.youtube.com/watch?v=fHztd6k5ZXY&t=44s>
 - “How do solar panels work? - Richard Komp” <https://www.youtube.com/watch?v=xKx-rkht7CpY>
 - “Wave and Tide Energy for Prize Money” <https://video.nationalgeographic.com/video/news/saltire-prize-vin?source=searchvideo>
 - “Iowa Wind Power” <https://video.nationalgeographic.com/video/wind-power?source=searchvideo>
 - “Solar Powered Water Heaters” <https://video.nationalgeographic.com/video/culhane-solar-wc?source=searchvideo>
 - “Solar Cooking” <https://video.nationalgeographic.com/video/solar-cooking?source=searchvideo>
 - “Solar Roads: Can Streets Become Giant Solar Panels?” <https://video.nationalgeographic.com/video/news/160310-solar-road-france-vin?source=searchvideo>
 - “India: The Power of Pine Needles” <https://www.youtube.com/watch?v=mzMoGYbJmVs>
 - “Nuclear Power in the 21st Century – IAEA” <https://www.youtube.com/watch?v=8D1S-VKjTJE4>
 - “Iceland: Geothermal Energy” <https://www.youtube.com/watch?v=ij6h97f3wt4>
 - “VIDEO: Sustainable Energy For All Forum-Clean and affordable energy for all – How are countries doing?” <http://www.un.org/sustainabledevelopment/blog/2017/04/sustainable-energy-for-all-forum-clean-and-affordable-energy-for-all-how-are-countries-doing/>
 - “DSG 7– Ensure access to affordable, reliable, sustainable and affordable energy for all” (<http://www.mdgmonitor.org/sdg7-ensure-access-to-affordable-reliable-sustainable-and-modern-energy-for-all/>).
 - <https://sustainabledevelopment.un.org/content/sdgs/large/Goal-7.jpg>
 - Mario Toselli Sustainable Development Goals Sketchnote Project (<http://www.maurotoselli.com/sustainable-development-goals-sketchnotes.html>).
-

Subject skills utilized:

- Geography
 - Physics
 - Natural Sciences
 - Art and Design
 - Social Studies
-

-
- Civics
 - Mathematics
-

Partnerships for the goals: (How can we multiply this and link it at the local, national and international levels? i.e. private sector, government, education, civil society, families)

- Parents
 - School authorities
 - Family
 - Friends
 - Elders
 - Small businesses that students frequent
 - Governmental authorities
-

Resources/Organisation:

- “SDG 7 – Ensure access to affordable, reliable, sustainable and affordable energy for all” (<http://www.mdgmonitor.org/sdg7-ensure-access-to-affordable-reliable-sustainable-and-modern-energy-for-all/>).
 - SUSTITUCIÓN <https://sustainabledevelopment.un.org/content/sdgs/large/Goal-7.jpg>
 - UN SDG 7 (<http://www.un.org/sustainabledevelopment/energy/>)
 - UN Sustainable Goal 7 (<https://sustainabledevelopment.un.org/sdg7>).
 - Clean technica (<https://cleantechnica.com/2017/01/22/renewables-now-cheapest-renewable-energy-costs-low-too-high/>).
 - Video: “A reality check on renewable” (<https://www.youtube.com/watch?v=E0W1ZZY-IV8o>).
 - Video: “The missing link to renewable energy” (<https://www.youtube.com/watch?v=Sddb-0Khx0yA>).
-

STUDENT SELF-EVALUATION RUBRIC	
Student's Name:	Kindly provide a brief response.
What are the sources of energy in my community?	
How does abundant and reliable energy make our lives easier? In what ways do we use it?	
What are the challenges that the world faces today concerning clean and affordable energy? How can we help our communities in the transformation to clean and affordable energy sources?	

TEACHER TO STUDENT EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
The student has learned about different clean energy sources and how they function.					
The student showed an improvement in the awareness of the importance of clean and affordable energy.					
The student understands the challenges faced in the transition to Clean and Affordable Energy in the world and his/her community.					
The student understands the advantages and disadvantages of each of the different energy sources.					

PEER EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Classmate evaluating:					
My classmate shows an interest in helping our community transition to clean energy sources.					
My classmate shows an awareness of the importance of clean energy in the environment.					
My classmate can describe the importance of clean and affordable energy.					
My classmate now knows how to distinguish and present the differences between clean, renewable and conventional energy sources.					

Videos



“What is Solar Power?” by National Geographic (n.d)



"Renewable Energy 101" by National Geographic (n.d).



"Alternative Energy" by National Geographic (n.d).



"Energy Conservation" by National Geographic (n.d)



“The future of clean-energy” The National (2016)



“Can 100% renewable energy power the world? - Federico Rosei and Renzo Rosei” by TED-Ed (2017)



“A guide to the energy of the Earth - Joshua M. Sneideman” by TED-Ed (2014)



“Solar-Powered Water Heaters” by National Geographic (n.d)



“Solar Cooking” by National Geographic (n.d)



“Solar Roads: Can Streets Become Giant Solar Panels” by National Geographic (n.d)



“India: The Power of Pine Needles” by United Nations (2015)



“Nuclear Power in the 21st Century – IAEA” by United Nations (2017)



“Iceland: Geothermal Energy” by United Nations (2012)



“VIDEO: Sustainable Energy For All Forum-Clean and affordable energy for all–How are countries doing?” by United Nations (2017)

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- National Geographic. (n.d). “Alternative Energy” [Video file]. Retrieved from: <https://video.nationalgeographic.com/video/alternative-energy?source=searchvideo>
- National Geographic. (n.d). “Energy Conservation” [Video file]. Retrieved from: <https://video.nationalgeographic.com/video/energy-conservation?source=searchvideo>
- National Geographic.(n.d).“Iowa Wind Power” [Video File]. Retrieved from: <https://video.nationalgeographic.com/video/wind-power?source=searchvideo>
- National Geographic.(n.d).“ Solar Cooking” [Video File]. Retrieved from: <https://video.nationalgeographic.com/video/solar-cooking?source=searchvideo>
- National Geographic.(n.d).“ Solar Powered Water Heaters” [Video File]. Retrieved from: <https://video.nationalgeographic.com/video/culhane-solar-wc?source=searchvideo>
- National Geographic.(2016).“ Solar Roads: Can Streets Become Giant Solar Panels?” [Video File]. Retrieved from: <https://video.nationalgeographic.com/video/news/160310-solar-road-france-vin?source=searchvideo>
- National Geographic.(2016).“Wave and Tide Energy for Prize Money” [Video File]. Retrieved from: <https://video.nationalgeographic.com/video/news/saltire-prize-vin?source=searchvideo>
- National Geographic. (n.d). “What is Solar Power?” [Video file]. Retrieved from: <https://video.nationalgeographic.com/video/101-video-shorts/what-is-solar-power?source=search-video>

National Geographic. (n.d). “What Renewable Energy 101” [Video file]. Retrieved from: <https://video.nationalgeographic.com/video/101-videos/renewable-energy-101>

TED-Ed. (2014). “A guide to the energy of the Earth - Joshua M. Sneideman” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=fHztd6k5ZXY&t=44s>

TED-Ed. (2017). “Can 100% renewable energy power the world? - Federico Rosei and Renzo Rosei” [Video file]. Retrieved from: <https://www.youtube.com/watch?v=RnvCbquYeIM>

TED-Ed. (2016). “How do solar panels work? – Richard Komp” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=xKxrkht7CpY>

The National. (2016). “The future of clean-energy” [Video file]. Retrieved from: <https://www.youtube.com/watch?v=jPLiUm9Rp9k>

United Nations. (2012). “Iceland: Geothermal Energy” [Video File]. Retrieved

United Nations.(2015). “India: The Power of Pine Needles” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=mzMoGYbJmVs>

United Nations. (2017). “Nuclear Power in the 21st Century – IAEA” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=8D1SVKjTJE4>

United Nations.(2017). “VIDEO: Sustainable Energy For All Forum-Clean and affordable energy for all – How are countries doing?” [Video File]. Retrieved From: <http://www.un.org/sustainabledevelopment/blog/2017/04/sustainable-energy-for-all-forum-clean-and-affordable-energy-for-all-how-are-countries-doing/>

Readings



“SDG 7 – Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for All” by MDG Monitor (2016).



“Sustainable Development Goal 7 – Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for All” by UN (2017).



“Renewables Now Cheapest, But How To Enable Faster Renewable Energy Growth?” by Clean Technica (2017).

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United Nations (2016).”UN Sustainable Development Goal 7”. United Nations Retrieved from: <https://sustainabledevelopment.un.org/sdg7>

Zachary Shahan (2017).“Clean technical”. Clean Technica. Retrieved from: <https://cleantechnica.com/2017/01/22/renewables-now-cheapest-renewable-energy-costs-low-too-high/>

Images



“Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for All”

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Goal 7: Affordable and Clean Energy, by UN India



Goal 7: Affordable and Clean Energy by Margreet de Heer (2015)

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“The World in 2030” by Trollbäck + Company (N/A)

8 DECENT WORK AND ECONOMIC GROWTH



http://www.un.org/sustainabledevelopment/SDG-goals_Goal-08.png

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Unit Author: Jesús López

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Sustainable Development Goal 8: Decent Work and Economic Growth

Summary of SDG 8, Content and Intent

Sustainable Development Goal 8: Decent Work and Economic Growth (SDG 8) promotes inclusive and sustainable economic growth, full productive employment and decent work for all. While many definitions exist of what constitutes ‘decent work,’ common attributes include a safe working environment, a living wage, job security, medical and pension plans and, ideally, home loans or other benefits as a part of the employment package. An economic system that works on the premise of the ‘greatest possible gain for the least possible input’ doesn’t lend itself to the sort of work situation described above, as employers, shareholders and financial institutions seek to maximize their share of the profits generated in a given workplace. In the current system, ongoing growth is required to keep the global and the local economy going. This ‘growth’ depends on the infinite production of goods that must be consumed by people around the planet. When the perpetual production and consumption cycle fails, capitalist economies grind to a halt.

The profit maximization imperative of the business and financial class drives the tendency toward low wages, with few or non-existent benefits, lack of job security for workers, coupled with a constant need to exploit natural resources as inputs into the production system. In today’s economy, the same workers who produce the goods need to be consumers of the goods produced. However, due to wage suppression, workers often lack sufficient discretionary capital to continue consuming products available on the markets; and without consumption, demand falters, leading to recessions, depressions, financial collapses and other detrimental tendencies inherent within the existing economic system.

A further challenge lies in the depletion of natural resources, which must be continually fed into the economic production mechanism at a rate much faster than they are able to replenish themselves. These and other deep contradictions reveal to us that the global-local economic system as it functions today is out-of-sync with both human and environmental

wellbeing – since its very nature requires the ongoing exploitation of human labor and the natural environment. Sustainable development as a discipline seeks to achieve and to maintain a symbiotic and ongoing balance among economic concerns, human wellbeing, and the restoration and sustainable usage of the natural environment.

Targets of SDG 8 include the aim to sustain a minimum of 7% gross domestic product growth per year in least developed countries. To achieve this, economic productivity should be increased through technological upgrading, innovation and diversification. High value added and labor intensive productive sectors should be prioritized. Policies need to emphasize productive activities, entrepreneurship, decent job production, creativity and innovation, aiming to consolidate micro-, small- and medium-sized enterprises, which requires access to reasonably-priced financial services.

Economic growth should be decoupled from environmental degradation. Resource efficiency as well as sustainable consumption and production should be priorities. Full, productive and decent employment must be made available for all youth, women, men and people with disabilities who seek it, with equal pay for equal work. All forms of forced labor, modern slavery, human trafficking and abusive child labor practices should be eliminated. Labor rights and the provision of safe and secure workplaces need to be guaranteed. Finally, sustainable tourism shall be promoted in order to create jobs while promoting local culture and products.

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What awareness should students have acquired by the end of this teaching unit?

By the end of the present unit, students will understand the structural relations between production, consumptions, wages, worker rights and the environmental challenges caused by the perpetual consumption-production imperative. They should be familiar with the primary targets expressed in SDG 8, particularly those pertaining to labor equality, job security, decent wages, full employment and equal pay for equal work. They will be able to identify the complex links and interdependencies found within the g/local economic system.

What values and attitudes should students have developed by the end of this teaching unit?

Students should value and demand economic justice for all. They should have developed

an awareness and adopted an attitude of advocacy for human wellbeing and for environmental restoration and sustainable usage.

What skills should students have developed by the end of this teaching unit?

Students should have the analytical skills needed to identify the symbiotic relationships between profit, wages and worker rights, as well as those between consumption, production and environmental degradation. They should understand and be able to explain how low worker's wages, and the privileging of capital over labor impacts on demand and consumption.

What behaviors and lifestyle choices should students have adopted by the end of this teaching unit?

Students can have a positive impact on the local economy by making conscientious decisions related to their consumption patterns and habits. By knowing the source of available products, students can select those that are environmentally and worker friendly. They can choose to buy locally and to avoid transnationally-produced items which compete with local industry. Such products have high transport costs and leave a large carbon footprint due to the long distances from the production site to the end consumer.

What possible transformative actions might be put forth to students' families and communities by the end of this teaching unit?

Students should be able to dialogue with friends, family and community members about how depressed wages, job insecurity and the lack of basic benefits impact on people's lives. They should know how the lack of a living wage effects consumption patterns both globally and locally. They should be able to identify and understand the links between consumption, production and environmental degradation. Students will communicate this knowledge to others, and the authors hope they will take the initiative to create a Local Consumption Campaign for their neighborhood and their larger locality.

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 8

Theme/Topic:

Decent Work and Economic Growth

Lesson Outcomes/Objectives:

1. To understand ways and means of securing a sustainable living wage for the family.
 2. To create social awareness concerning wage/work hours, worker benefits, health, retirement, producers/consumers, and gender equality in the workplace.
 3. To be sensitized toward the balance between families' needs and income
 4. To acquire awareness of safe and effective utilization of Earth's resources
-

Activities/Tasks:

1. Familiarize Students with SDG 8
 - 1.1 Show video "Learning about SDG 8" (Referenced below)
 - 1.2 Activity with students where teacher uses cookies representing an economic chart of how different countries have more *per capita* income than others. Each student will receive a certain amount of cookies depending on the country designated, in this way creating awareness of economic inequalities around the world. (See Hunger Banquet Instructions <https://www.oxfamamerica.org/take-action/events/hunger-banquet/> or <http://penniesoftime.com/awareness-activity-teach-kids-about-hunger-through-a-hunger-dinner/>).
 2. Research on local businesses (Field work)
 - 2.1 Students will research in order to discover what the main sources of business and economy are in their community
 - 2.2 Students will interact with small business owners in order to learn about supply, demand, cost and profit-related issues
 - 2.3 Students will observe gender and power dynamics in the work place
 3. Offer/propose better ideas for management
 - 3.1 In the classroom, students will discuss their research findings
-

-
- 3.2 In the classroom, students will offer/propose ideas for efficient and sustainable management of the place they did their research
4. Students will reflect on how they can improve their families' economic wellbeing
- 4.1 Students will write a reflection page with their opinion on the importance of the economy, a living wage and how these factors affect their household
- 4.2 Include ideas on sustainability in the workplace, and how we can still take care of the planet both at work and at home.
-

Teaching materials: (Readings, audio visuals, illustrations, photos, realia)

Videos:

<https://www.youtube.com/watch?v=mZpyJwevPqc>

<https://www.youtube.com/watch?v=JHGKyunsZBA>

“Decent Work in the Sustainable Development Goals” <https://www.youtube.com/watch?v=Du0b1brKBhg>

“Fostering Sustainable Economic Growth, Transformation and Promoting Sustainable Consumption and Production” https://www.youtube.com/watch?v=akG_50JwUJQ

- 17 Goals to Transform our World <https://www.flickr.com/photos/xlontrax/28660306374>

- Sustainable Development Goal 8 <https://sustainabledevelopment.un.org/sdg8>

- Sustainable Development Goals <http://www.fao.org/sustainable-development-goals/goals/goal-8/en/>

- “Ethiopia – Making Finance for Youth Now” <https://www.youtube.com/watch?v=RIIn-ju07r9pQ>

- Economy Chart Illustration https://sc.cnbcfm.com/applications/cnbc.com/resources/files/2014/04/30/economies_chart_0.jpg

Illustrations:

- 10 Principles of Fair Trade <http://wfto.com/fair-trade/10-principles-fair-trade>

- “Decent work and economic growth” <http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-8-decent-work-and-economic-growth.html>

- Economy Chart Illustration

https://sc.cnbcfm.com/applications/cnbc.com/resources/files/2014/04/30/economies_chart_0.jpg

- World Alliance for Breastfeeding Action

<http://waba.org.my/breastfeeding-a-key-to-sustainable-development-unicef-world-breastfeeding-week-2016-message/>

Key Questions:

- How does the larger economy impact on my family?
 - What contributions can I make to the family income?
 - How can I make people in my social circle aware of the balance between work and family?... About the requirements for a living wage?
-

Assessment: (Teacher, Peer, Self)

Evaluation tables/charts are provided below.

Activities student will apply in his/her personal life

Students will write a reflection paper on the impact of the larger economy on their families' aggregate income in order to gain awareness of what things cost and how the economy works. They will create a list of the prices of household items they are familiar with, taking note of the cost and later asking parents about the family's income in relation to the aforementioned costs. This will give students a better view of how their family's income is distributed in order to sustain their home.

Activities student will apply with his/her community

Students will create awareness about the importance of work and family time by asking friends in their neighborhood how much time their parents work, how much time they spend at home and on other activities. As a group, they will generate ideas for economic growth within their social circle.

Readings & Information Sources:

- Sustainable Development Goal 8 <https://sustainabledevelopment.un.org/sdg8>
 - Sustainable Development Goals <http://www.fao.org/sustainable-development-goals/goals/goal-8/en/>
 - World Alliance for Breastfeeding Action <http://waba.org.my/breastfeeding-a-key-to-sustainable-development-unicf-world-breastfeeding-week-2016-message/>
-

Subject skills utilized:

- Civic and Ethics
- Economics
- Administration
- Math
- Social Studies

Partnerships for the goals: (How can we multiply this and link it at the local, national and international levels? i.e. private sector, government, education, civil society, families)

1. Create socioeconomic profiles of families in the class, school, neighborhood, city, state, country, etc.
2. Compare global trends in occupations and wage/work hours, health, retirement and other benefits, producers/consumers, and gender equality in the workplace
3. Highlight lifestyles and livelihoods in light of international standards of well being
4. Articles or investigations on utilizing the Earth's resources without damaging or tampering with its natural course

Resources/Organization:

SDG 8. Decent Work and Economic Growth [www.fao.org](http://www.fao.org/sustainable-development-goals/goals/goal-8/en/). (n.d.). Retrieved October 08, 2017, from <http://www.fao.org/sustainable-development-goals/goals/goal-8/en/>

Breastfeeding: A Key to Sustainable Development UNICEF and WHO Joint Message for World Breastfeeding Week 2016. (n.d.). Retrieved October 08, 2017, from <http://waba.org.my/breastfeeding-a-key-to-sustainable-development-unicef-world-breastfeeding-week-2016-message/>

Goal 8: Sustainable Development Knowledge Platform. (n.d.). Retrieved October 08, 2017, from <https://sustainabledevelopment.un.org/sdg8>

STUDENT SELF-EVALUATION	
Student's Name:	Please provide brief answers below:
How did my perspective change after this research?	
How was my awareness of my family's income before the research? What new insights and appreciation have I gained through the research?	
How can I contribute to my family's income and economic wellbeing?	
What are some things I would like to change in my family's economic or labor situation?	

TEACHER TO STUDENT EVALUATION					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Student's awareness of economic dynamics in his/her household.					
Student's research reflects interest on how to improve economic growth in their family and social circle.					
Student creates awareness for others concerning the balance between work and family					
Student contributes ideas on how to improve local economic growth without negatively affecting themselves, their family, or the planet.					

PEER EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Classmate evaluating:					
My classmate understands the importance of economic sustenance within his/her family and social circle.					
My classmate demonstrates awareness concerning his/her family's income relative to the cost of living					
My classmate has developed an idea about how he/she can contribute to their family's overall income and wellbeing.					

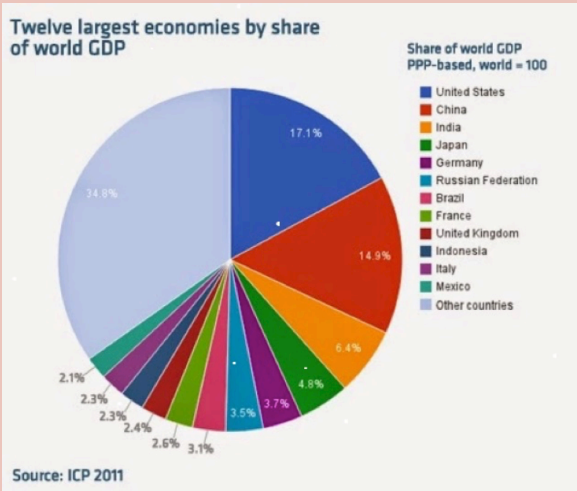
Images:



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Breastfeeding: A Key to Sustainable Development. By World Alliance for Breastfeeding Action.



Twelve largest economies by share of world GDP. By Rightaways.

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Toselli, M. (2016, August 28). Goal 8. Decent Work and Economic Growth. Retrieved October 08, 2017, from <https://www.flickr.com/photos/xlontrax/28660306374>

Breastfeeding: A Key to Sustainable Development UNICEF and WHO joint message for World Breastfeeding Week 2016. (n.d.). Retrieved October 08, 2017, from <http://waba.org.my/breastfeeding-a-key-to-sustainable-development-unicef-world-breastfeeding-week-2016-message/>

Videos:



Economic Growth is the Defining Challenge. By Ted Talks.



“Ethiopia – Making Finance Work for Youth Now” by United Nations (2018)



“Decent Work in the Sustainable Development Goals” by International Labour Organization (2015)



"Fostering Sustainable Economic Growth, Transformation and Promoting Sustainable Consumption and Production” by United Nations (2015)



Economic Growth easily explained (explainity® explainer video)

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Intro to Economics: Crash Course Econ #1

Articles:



Breastfeeding: A Key to Sustainable Development
UNICEF and WHO Joint Message for World Breastfeeding Week 2016



Sustainable Development Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all



Sustainable Development Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Bibliography for videos, images, articles

Videos:

Crash Course.(2015). “Income and Wealth Inequality: Crash Course Economics #17” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=0xMCWr0O3Hs>

Crash Course.(2015). “Intro to Economics: Crash Course Econ #1” [Video File]. Retrieved from: https://www.youtube.com/watch?v=3ez10ADR_gM&list=PL8dPuuaLjXtPNZw-z5_o_5uirJ8gQXnhEO

Explainity Channel.(2014).”Economic Growth easily explained (explainity® explainer video)” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=qC-U76O76X0>

International Labour Organization.(2015). “Decent Work in the Sustainable Development Goals.” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=Du0b1brKBhg>

International Labour Organization.(2015). “The World of Decent Work Today” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=JHGKyunsZBA>

International Labour Organization.(2015). “What is Decent Work?” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=mZpyJwevPqc>

United Nations Development Programme.(n.d)“Decent work and economic growth” [Digital Image]. Retrieved from: <http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-8-decent-work-and-economic-growth.html>

United Nations.(2018).“Ethiopia – Making Finance for Youth Now” [Video File]. Retrieved From: <https://www.youtube.com/watch?v=RIInju07r9pQ>

United Nations.(2015).”Fostering Sustainable Economic Growth, Transformation and Promoting Sustainable Consumption and Production” [Video File]. Retrieved from: https://www.youtube.com/watch?v=akG_50JwUJQ

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Food and Agriculture organization of the United Nations.(nd). Promote inclusive and sustainable economic growth, employment and decent work for all. Retrieved from: <http://www.fao.org/sustainable-development-goals/goals/goal-8/en/>

Sustainable Development.(2017). “Progress of goal 8 in 2017”. Retrieved from: <https://sustainabledevelopment.un.org/sdg8>

UNICEF.(2016).Breastfeeding: A Key to Sustainable Development UNICEF and WHO joint message for World Breastfeeding Week 2016. (n.d.). Retrieved from: <http://waba.org.my/breastfeeding-a-key-to-sustainable-development-unicef-world-breastfeeding-week-2016-message/>

Illustrations:

Sarcauga, M. (2017). 10 Principles of Fair Trade [Digital Image]. Retrieved October 08, 2017, from <http://wfto.com/fair-trade/10-principles-fair-trade>

United Nations Development Programme.(nd). Goal 8. Decent Work and Economic Growth [Digital Image]. Retrieved from: <http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-8-decent-work-and-economic-growth.html>

World Alliance for Breastfeeding Action.(2016).Breastfeeding: A Key to Sustainable Development UNICEF and WHO joint message for World Breastfeeding Week 2016. Retrieved October 08, 2017, from <http://waba.org.my/breastfeeding-a-key-to-sustainable-development-unicef-world-breastfeeding-week-2016-message/>

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



<https://sustainabledevelopment.un.org/sdg9>

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Unit Author: Javier Pichardo

United Nations Sustainable Development Goal 9: Industry, Innovation and Infrastructure

Summary of SDG 9's Content and Intent

United Nations Sustainable Development Goal 9: Industry, Innovation and Infrastructure (SDG 9) aims to promote sustainable and inclusive industrialization, to foster innovation that enhances human life while helping restore and manage sustainable environmental usage, and to build sustainable and resilient infrastructure. Investment in innovation and infrastructure are primary drivers of economic growth and, as such, SDG 9 can help guide investment decisions in ways that are enhancing to human life and planetary wellbeing. Areas of primary concern for building a sustainable future include green mass transportation systems and renewable energy, as well as the development of information-communication technologies and new industries designed specifically for achieving sustainable development.

Technological innovation will be increasingly aimed at providing solutions to environmental and economic challenges in the global and the local milieus. Through green technologies and industries, new jobs are arising in areas that promote energy efficiency and scientific research for innovation designed to support sustainable development.

SDG 9 further aims to promote global access to the internet making available the vast and varied forms of knowledge that it provides. Efforts are currently underway to bridge the digital divide, so that people in the developing world may access information and knowledge that can help them promote innovation and entrepreneurship, as well as the restoration and sustainable usage of the physical environment in their home communities and beyond.

What awareness should students have acquired by the end of this teaching unit?

Students should become aware of the global and local need to develop sustainable industries, lasting and resilient infrastructure, and innovations designed to enhance the g/local

advance toward a sustainable future for all. They should comprehend and be capable of seeing the interdependent nature of all the components of SDG 9, as well as understanding causes and possible solutions to current inequalities arising from unequal levels of development and access to development opportunities both locally and around the world.

What *values and attitudes* should students have developed by the end of this teaching unit?

By the end of this unit students should have a general understanding of the current state of industry, innovation and infrastructure found at the global and the local levels. They should comprehend the shifting and dynamic nature of development, and be able to identify their own personal power to become a part of the movement toward sustainability and inclusiveness wherever they find themselves now and in the future. The authors are confident that this understanding will lead students to adopt values and attitudes that will orient their preference and their decisions toward seeking employment in industries that prioritize sustainable, inclusive and equitable development for all.

What *skills* should students have developed by the end of this teaching unit?

Students should gain the ability to discern between industries, their technological advances and infrastructural systems that are unsustainable and those that are evolving toward genuine sustainability. They should be able to suggest orientations and directions for furthering advances toward sustainable industrial development, sustainable and resilient infrastructure, and innovations aimed at promoting ongoing sustainability.

What *behaviors and lifestyle choices* should students have adopted by the end of this teaching unit?

In addition to the awareness gained, it is hoped that students will shift their consumption of technological innovations to sustainable usage and re-usage – in this manner opting out of the market-driven race to keep up with technological advances in the myriad gadgets and

devices offered today. As infrastructure for mass, public and green forms of transportation continues to grow, students should opt for environmentally-friendly forms of mobility when it is within their power to do so.

What possible *transformative actions* might be put forth to *students' families and communities* by the end of this teaching unit?

Students will be encouraged to sustain an ongoing conversation with family and community members designed to make visible the potential for shifts toward sustainability in local and global industry, green and sustainable innovation, and infrastructural development using resilient, environmentally friendly and often re-used or recycled materials, such as the new roads and highways being developed in India employing recycled plastic materials¹. Students are further encouraged to organize and carry out activities with friends, family and community that promote awareness and lifestyle changes toward sustainable industry, innovation and infrastructure.

¹ “Plastic Roads: India’s Radical plan to bury its garbage beneath the streets,” <https://www.theguardian.com/sustainable-business/2016/jun/30/plastic-road-india-tar-plastic-transport-environment-pollution-waste>

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 9

Theme/Topic:

Industry, Innovation and Infrastructure

Lesson Outcomes/Objectives:

Students will:

- Reflect on the importance of Industry, Innovation and Infrastructure for the development of their community.
- Learn about the challenges and the advantages of developing sustainable Industry, Innovation and Infrastructure.
- Explore the Industry and Infrastructure found in their communities.
- Present innovative ideas that favor the development of sustainable industry and infrastructure in their locality.

Activities/Tasks:

1. Infrastructure

1.1. Students will brainstorm about how industry, innovation and infrastructure make their life easier. They will compare today's industrial and infrastructural advances with different moments in the past.

1.2 The teacher and students will discuss what is infrastructure, with the teacher explaining the different types of infrastructure and its importance in our daily life.

1.3 Students will go around the school 1) identifying infrastructure and how it adds to our lives. 2) They will discuss what aspects of the existing infrastructure can be improved in the school.

1.4 Based on their observations, students will discuss what they think their school needs in terms of infrastructural improvement and why.

1.5 Students will go outside the school to observe and take notes on the infrastructure in their community, 1) to inventory what exists and, 2) to make possible suggestions for improvement.

1.6 Based on their observations, students will discuss what they think their community needs in terms of infrastructural improvement and why.

1.7 Students will present a proposal about infrastructure to school and community authorities. They will explain aspects of infrastructural improvement and why they think it is needed.

2. Industry.

2.1 Students will have an open discussion about their knowledge of industry and its importance in their communities in terms of employment, products, services, etc.

2.2 Teacher and students will watch and discuss the videos “Types of industries” (listed below).

2.3 Students will go outside the school to research and take notes on the types of industry that are predominant in their region. What functions do the existing industries serve? How can they be improved? What is the environmental impact that the industries have on their communities? What industries are lacking in the locality?

2.4 Based on their observations, students will discuss what is needed in their community in terms of industry and why.

2.5 Students will create posters representing the industries present in their community, and the economic and environmental impacts that they have.

2.6 Students will present and explain the posters to other students and to school authorities. The posters will then be placed around the school

3. Innovation

3.1 Students will have an open discussion about their knowledge of innovation and its importance in their community.

3.2 Teacher and students will watch and discuss the videos “What is Innovation?” and “The Innovator” (listed below).

3.3 Students will view the videos “What Makes Bridges so Strong?” and “The twelve most amazing bridges ever built” (listed below).

3.4 Students and teacher will bring gum, candy and raw pasta to class in order to build a bridge, or some type of infrastructural element. The bridge or other element that they build must be able to sustain itself, or to stand on its own. The teacher will stimulate students’ creativity by encouraging them to explore their ideas about innovation.

3.5 Based on the bridge-construction activity, the students and the teacher will discuss what they think ‘innovation’ is, how it works, and what must be done in order to support people’s innovative ideas.

3.6 Students will watch the video “Where good ideas come from;” they will discuss and reflect on it (listed below).

3.7 Students will create posters on the importance of innovation.

3.8 Students will present the posters to other students and to school authorities. The posters will be placed around the school.

4. Students will reflect and propose ideas relating to the global challenges faced as we seek to develop sustainable industries and infrastructure.

4.1 Teacher and students will watch and discuss the videos “Green Growth: a new model for sustainable development in Asia”, “Green Economy and Sustainable Development: Bringing Back the Social”, “Growing Green Economies” and the ‘Mind Map of SDG 9’ (listed below) to reflect on the global challenges concerning Industry, Innovation and Infrastructure that the world faces today.

4.2 Students will create a mind map proposing innovations for sustainable infrastructural and industrial development for their community and the world.

4.3 Students will draw and create posters explaining the challenges concerning Industry, Innovation and Infrastructure that the world faces today. They will try to discuss it with their families and classmates.

Teaching Materials: (Readings, audio visuals, illustrations, photos, realia)

- “Sustainable Development Goals Explained: Industry, Innovation and Infrastructure” <https://www.youtube.com/watch?v=wCfNiGLTg-I&t=8s>

- “Haiti recovery: Rebuilding infrastructure” <https://www.youtube.com/watch?v=y-4plfLb237M>

- “UNCDF and innovation” https://www.youtube.com/watch?v=YH9XPqWKHeE&list=PLwoDFQJEq_0ZM6lHylytd9tNhFYizO_xx

- “Infrastructure Development: Four Cities To Benefit From UN-Habitat Project” <https://www.youtube.com/watch?v=OTUxQbUVnog>

- “Infrastructure and Urban Development” <https://www.youtube.com/watch?v=kNvmaq3e-3Hk>

- “The 4 commandments of cities - Eduardo Paes” https://www.youtube.com/watch?v=C_QRAHTw4M8

- “10 Innovative Student Projects Reimagine Bangladesh’s Future” <https://www.youtube.com/watch?v=vRVFFNF8rUc>

- “Branching Out for a Green Economy by Sir David Attenborough”

- “Green Growth and Development – It’s Possible” <https://www.youtube.com/watch?v=UaDEW26ZeoA>

- “Mind map of SDG 9” (<http://www.maurotoselli.com/sustainable-development-goals-sketchnotes.html>)

Key Questions:

- What types of infrastructure support my life day-by-day?
- What is the importance of infrastructure for sustaining our way of life each day?
- What is the importance and impact of existing industry in my community?
- What can I do to improve both infrastructure and industry in my community?
- What is ‘innovation’ and how can I innovate for the betterment of my community?

Assessment: (Teacher, Peer, Self)

Please see the evaluation rubrics below

Activities student will apply in his/her personal life.

- Students will keep a diary of “innovation and infrastructure,” exploring and expressing new ideas that could improve their communities.
- Students will take pictures and draw the “infrastructure” in their community, trying to make it visible for themselves, and so that others can become more aware of its presence and its functions in society.

Activities student will apply with his/her community.

- Students will explain the importance and the impact of infrastructure and industry in their communities to the adults and people they know.
- Students will make new posters or projects pointing to “infrastructure,” making it visible.
- Students will continue to innovate and help other people to understand the transformative power of innovation.

Readings & information sources:

- “Sustainable Development Goals Explained: Industry, Innovation and Infrastructure” <https://www.youtube.com/watch?v=wCfNiGLTg-I&t=8s>
 - “Haiti recovery: Rebuilding infrastructure” <https://www.youtube.com/watch?v=y-4plfLb237M>
 - “UNCDF and innovation” https://www.youtube.com/watch?v=YH9XPqWKHeE&list=PLwoDFQJEq_0ZM6lHylytd9tNhFYizO_xx
 - “Infrastructure Development: Four Cities To Benefit From UN-Habitat Project” <https://www.youtube.com/watch?v=OTUxQbUVnog>
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- “Infrastructure and Urban Development” <https://www.youtube.com/watch?v=kNvmaq3e-3Hk>
 - “The 4 commandments of cities - Eduardo Paes” https://www.youtube.com/watch?v=C_QRAHTw4M8
 - “10 Innovative Student Projects Reimagine Bangladesh’s Future” <https://www.youtube.com/watch?v=vRVFFNF8rUc>
 - “Branching Out for a Green Economy by Sir David Attenborough”
 - “Green Growth and Development – It’s Possible” <https://www.youtube.com/watch?v=UaDEW26ZeoA>
 - “Mind map of SDG 9” (<http://www.maurotoselli.com/sustainable-development-goals-sketchnotes.html>)
 - “The importance of infrastructure” (<https://www.thoughtco.com/what-is-infrastructure-why-important-177733>)
 - “Goal 9: Build resilient infrastructure, promote sustainable industrialization and foster innovation” (<http://www.un.org/sustainabledevelopment/infrastructure-industrialization/>)
 - “Goal 9—A Sustainable Future of Infrastructure” (<https://unchronicle.un.org/article/goal-9-sustainable-future-infrastructure>)
-

Subject skills utilized:

- Mathematics
 - Geography
 - Physics
 - Natural Sciences
 - Geography
 - Arts and Design
 - Administration
-

Partnerships for the goals: (How can we multiply this and link it at the local, national and international levels? i.e. private sector, government, education, civil society, families)

Engage:

- Parents
 - School authorities
 - Family
 - Friends
 - Older people
-

-
- Local authorities
 - Organizations responsible for the infrastructure of the community
 - Government
-

Resources/Organisation:

- “The importance of infrastructure” (<https://www.thoughtco.com/what-is-infrastructure-why-important-177733>)
 - “Goal 9: Build resilient infrastructure, promote sustainable industrialization and foster innovation” (<http://www.un.org/sustainabledevelopment/infrastructure-industrialization/>)
 - “Goal 9 – A Sustainable Future of Infrastructure” (<https://unchronicle.un.org/article/goal-9-sustainable-future-infrastructure>)
-

STUDENT SELF-EVALUATION RUBRIC

Student’s Name:

Kindly provide short answers below.

Explain the importance of infrastructure in your community.

What services do infrastructure and industry provide in my community?

What infrastructure is lacking in my community, or how can existing infrastructure be improved in line with sustainable development?

What is the importance of innovation? How can I innovate for positive transformations in my community?

Explain the challenges that the world faces today concerning Industry, Innovation and Infrastructure.

TEACHER TO STUDENT EVALUATION RUBRIC					
Student's Name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
The student can identify the different types of infrastructure existing in the community.					
The student is aware of the services provided and the overall impacts of infrastructure and industry on people's lives.					
The student is aware of the challenges facing his/her community in the areas of Industry, Innovation and Infrastructure.					
The student is able to propose and innovate transformative solutions to challenges faced in the community.					

PEER EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Classmate evaluating:					
My classmate has identified and understands benefits and challenges concerning Industry, Innovation and Infrastructure in our community.					
My classmate is aware of the role of industry, infrastructure and innovation in our daily lives.					
My classmate is aware of the limitations and the challenges facing industry, infrastructure and innovation in our community.					
My classmate knows how to present and distinguish advantages of having green and responsible industry and infrastructure in the community.					

Videos



“Urbanization and the future of cities” by Vance Kite (2013).



“Sustainable Development Goals Explained: Industry, Innovation and Infrastructure” by United Nations (2015). “What is Innovation?” by David Brier & Rafa Galeano (2013).

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“Haiti recovery: Rebuilding infrastructure” by United Nations (2015).



“UNCDF, and Innovation” by United Nations (2018).



“Infrastructure Development: Four Cities to Benefit from UN-Habitat Project” by United Nations (2016).



“Infrastructure and Urban Development” by World Economic Forum (2013).



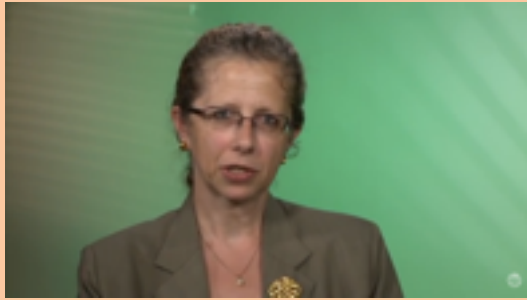
“The 4 commandments of cities – Eduardo Paes” by TED-Ed (2013).



“10 Innovative Student Projects Reimagine Bangladesh’s Future” by World Bank (2016).



“Branching Out for a Green Economy by Sir David Attenborough” by United Nations (2011).



“Green Growth and Development – It’s possible by World Bank (2010)

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Topic 2: Industry.

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TED-Ed.(2013). “The 4 commandments of cities - Eduardo Paes” [Video File]. Retrieved from: https://www.youtube.com/watch?v=C_QRAHTw4M8

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United Nations.(2010). “Haiti recovery: Rebuilding infrastructure” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=y4plfLb237M>

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United Nations.(2018). “UNCDF and inovation” [Video File]. Retrieved from: https://www.youtube.com/watch?v=YH9XPqWKHeE&list=PLwoDFQJEq_0ZM6lHylytd9tN-hFYizO_xx

World Bank.(2010).“Green Growth and Development – It’s Possible” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=UaDEW26ZeoA>

World Economic Forum.(2013).“Infrastructure and Urban Development” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=kNvmag3e3Hk>

World Bank.“10 Innovative Student Projects Reimagine Bangladesh’s Future” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=vRVFFNF8rUc>

Readings

“The Importance of Infrastructure” by Jackie Kraven (2017).



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“Goal 9: Build resilient infrastructure, promote sustainable industrialization and foster innovation” by UN.

Goal 9—A Sustainable Future of Infrastructure | UN Chronicle

UNOPS has a key role to play in building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation. Investing in basic, sustainable infrastructure is essential to improving the living standards for communities worldwide. When we speak of the basics, we m...

UNCHRONICLE.UN.ORG

“Goal 9—A Sustainable Future of Infrastructure” by UN (2015).

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United Nations.“Goal 9: Build resilient infrastructure, promote sustainable industrialization and foster innovation”. United Nations. Retrieved from: <http://www.un.org/sustainabledevelopment/infrastructure-industrialization/>



“Goal 9: Industry, Innovation and Infrastructure” by Margreet de Heer (2015).



“Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation” by Mauro Toselli (2016).

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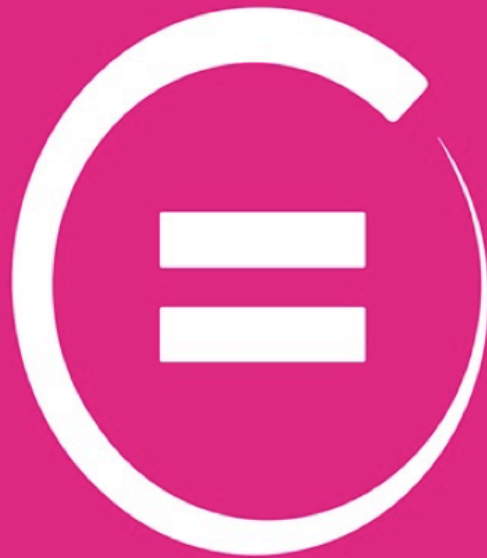
Topic 1: Infrastructure

De Herr, M. (2015). “Goal 9: Industry, Innovation and Infrastructure”. Comics United Nations. Retrieved from: http://cdn.worldslargestlesson.globalgoals.org/2016/06/A-To-Do-List-for-the-Planet_Page_10_Image_0001.jpg

Topic 3: Innovation

Toselli, M. (2016). “Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”. SDGsketch. Retrieved from: <http://www.mauro-toselli.com/sustainable-development-goals-sketchnotes.html>

10 REDUCED INEQUALITIES



<http://www.un.org/sustainabledevelopment/inequality>

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Unit Author: Ramón Hernández and Yessica Vega

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United Nations Sustainable Development Goal 10: Reduced Inequalities

Summary of SDG 10's Content and Intent

United Nations Sustainable Development Goal 10: Reduced Inequalities (SDG 10) aims to reduce inequalities that continue to widen among various sections of the society and the community. The gap between the rich and the poor, the advantaged and the disadvantaged with regard to education, availability of resources and access to opportunities is widening in spite of urbanization, developments in science and technology, knowledge generation and the information explosion. In developing countries, inequality has increased by eleven percent if we take into account population growth. Sound policies are required to reduce inequalities and to empower the lower percentile of disadvantaged segments of local, national and global society.

What *awareness* should students have acquired by the end of this teaching unit?

SDG 10 will build awareness and enhance knowledge with regard to the harsh reality of persistent inequalities among countries and among societal sectors within nation-states. The various forms of inequality are addressed, and students will be able to ascertain the structural reasons for the prevalence of ongoing inequalities. Through the lesson, students will develop the capacity to address the underlying causes of persistent inequalities and do their bit to reduce the gaps by understanding what is in their control to change and what is beyond it. Students will also be prepared to address inequalities that exist in terms of gender, ethnicity, availability of resources and wealth. Students will be motivated and inspired to attempt life-style changes that reduce inequality in the aforementioned and in other aspects of life.

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What *values and attitudes* should students have developed by the end of this teaching unit?

By the end of this unit students should have a general understanding of the prevalence of inequality and its various dimensions across different parts of the world. They should have developed the social values of service-mindedness, empathy, inclusiveness, tolerance, respon-

sible livelihood, independent thinking and accountability. The authors are confident that this understanding will lead students to adopt values and attitudes, and to provide them with skills that help them recognize their power to become an instrumental force to minimize inequalities among peers, classmates, other students in the school, family members, parents and members of the larger community.

What *skills* should students have developed by the end of this teaching unit?

By the end of the unit, students will have developed analytical and critical thinking on issues related to inequality. Problem solving skills will be enhanced through constructive engagement with issues and practices of inequality found in their lives and in their locality. Students will apply knowledge acquired by offering and disseminating solutions to societal, economic and environmental inequalities.

What *behaviors* and *lifestyle choices* should students have adopted by the end of this teaching unit?

In addition to the awareness gained, students will recognize and be concerned about local, national and global inequalities. They will engage as responsible members of society in order to reduce the inequalities. After the unit, students will be equipped with the skills required to build capabilities and to negotiate in favor of disadvantaged members of society, treating all with respect and dignity. They will strive to educate others who are educationally disadvantaged, imparting digital literacy to the digitally disadvantaged. Once students gain confidence and realize that they can make a difference in other people's lives, they will be motivated, encouraged and inspired to behave responsibly toward achieving the goals targeted for SDG 10.

What possible *transformative actions* might be put forth to *students' families* and *communities* by the end of this teaching unit?

Students will be encouraged to communicate with peers, family and community members in order to motivate, encourage and inspire others to do their part toward reducing inequali-

ties in their local milieu. Awareness building with their peers about disadvantaged sections of society will contribute to adopting best practices for emulation and replication. Students are further encouraged to organize and carry out activities with friends, family and community members that promote awareness and lifestyle changes towards reducing inequalities locally, nationally and globally.

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 10

Theme/Topic:

Reduced Inequalities

Lesson Outcomes/Objectives:

- Students will acquire information on inequality
- Students will attain concepts on various forms and diverse aspects of inequality i.e. gender, structural, racial, wealth distribution, access to myriad types of resources, etc.
- Students will be able to propose lifestyle changes that reduce inequality in the aforementioned and other aspects of life
- Students will develop analytical and critical thinking on issues related to inequality
- Students will develop problem solving skills through their constructive engagement with the issues and practices of inequality
- Students will apply knowledge acquired by generating and disseminating solutions to societal, economic and environmental inequalities
- Students will develop skills towards eliminating all forms of inequality

Activities/Tasks:

- A brainstorming activity will be conducted to assess students' awareness of the concept of inequality and issues related to inequality that exist around them
 - The teacher will ask students to identify areas where inequality is prevalent
 - Students will cite reasons for the prevalence of inequality
 - The teacher and students will discuss where and why various forms of inequality exist
 - The teacher will show the students a set of videos with information on inequality (See video listings below)
 - Students will be given a scenario in which they will analyze, identify and propose ways to rectify various forms of inequality that exist in human societies
-

Teaching materials: (Readings, audio visuals, illustrations, photos, realia)

Videos

- Familiarize Students with SDG 10
 - Students browse the content and acquire preliminary information on inequality. A platform for discussion and generating new ideas may be attempted by watching following videos:
 - "These are the best countries at reducing inequality" <https://www.youtube.com/watch?v=ptdqs88Jd5Q>
 - "10 best countries at sharing wealth" <https://www.youtube.com/watch?v=i53NGThBdoc>
 - Bill Gates: How to Narrow the Gap of Inequality https://www.youtube.com/watch?v=9omR20_jF68
 - Why Some Countries Are Poor and Others Rich. <https://www.youtube.com/watch?v=9-4V3HR696k>
 - "The Sustainable Development Goals Explained: Reduced Inequalities" <https://www.youtube.com/watch?v=09pF3-qrpOQ>
 - Goal 10: Reduced Inequalities http://4dj7dt2ychlw3310xlowzop2.wpengine.netdna-cdn.com/wp-content/uploads/2016/09/de_heer_full_set-page-011.jpg
 - "Goal 10 - Reduced Inequalities" https://www.gsma.com/betterfuture/wp-content/uploads/2016/02/GSMA_UN_SDG_Microsite-Infographics_02-10.png
 - The Miniature Earth <http://www.miniature-earth.com/>
 - "UNICEF: Progress on the Millennium Development Goals, with Equity, in Nepal" <https://www.youtube.com/watch?v=3zcqRrotJJM>
-

-
- “Reduce inequality within and among countries” <https://r3a8snvjie-flywheel.netdna-ssl.com/wp-content/uploads/Goal-10-e1439199969963.jpg>
 - Students will become aware of the actual situation concerning inequalities - why inequality exists and what as global citizens we can do to reduce it or eliminate it altogether. <http://www.comicsunitingnations.org/comics/>
 - Students in groups will analyze the information collected, and based on facts acquired will think of possible solutions to address these inequalities
 - Students will explore examples and contexts of inequalities that exist in their community and locality
-

Key Questions:

- What is inequality?
- Where do you see inequality?
- What are the various forms of inequality found in human societies?
- What are the historical and present-day causes of these inequalities?
- Are some forms of inequality necessary and helpful? If so, please give examples and explain why they are useful or necessary.
- What forms of inequality were you aware of before this course?
- Once you’ve identified various forms of inequality, what sort of solutions can you propose in order to reduce them?

Assessment: (Teacher, Peer, Self)

In-class participation
 Quizzes
 Presentation
 (Please see the evaluation rubrics below)

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Activities student will apply in his/her personal life

- Students will assess the level of inequality found in their society, i.e. with respect to classmates, peers, neighborhoods, etc. They will reflect on whether the inequality needs to be overcome and, if so, how?
 - What are the underlying causes of the inequalities identified?
 - What steps can we take as individuals to reduce inequalities that are evident in our community and society?
 - Students will be encouraged to get involved in local programs regarding inequality issues
-

Activities student will apply with his/her community

- Students will propose a project focusing on a particular type of inequality, i.e. gender, class, racial, educational, economic, digital, social, economic, etc.
 - Each student will present a study based on first-hand information collected from their locality
 - Students will brainstorm on possible solutions and means to minimize inequalities
 - Students will reflect on measures that can be taken at the individual, local and governmental levels to reduce inequalities
-

Readings & Information Sources:

- SDG 10: Reduced Inequalities, The Challenge <http://in.one.un.org/page/sustainable-development-goals/sdg-10/> <http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-10-reduced-inequalities.html>
 - How I teach students about equality: only Smarties have the answer <https://www.theguardian.com/teacher-network/2015/jan/28/teach-students-equality-smarties>
 - “Equality: why it matters” http://www.un.org/sustainabledevelopment/wp-content/uploads/2018/01/16-00055j_Why-it-Matters_Goal10_Equality_new-icon.pdf
 - Poor concentration: Poverty reduces brainpower needed for navigating other areas of life <https://www.princeton.edu/news/2013/08/29/poor-concentration-poverty-reduces-brain-power-needed-navigating-other-areas-life>
-

Subject skills utilized:

- Social Studies
 - Civics and ethics
 - Mathematics
 - Analytical thinking
 - Critical thinking
 - Problem solving skills
-

Partnerships for the goals:

- Students will work together as a group
 - Students will talk about inequality and enhance awareness in their social circle
 - Students can encourage the family to take an active part in activities in the community regarding inequality
-

STUDENT SELF-EVALUATION RUBRIC	
Student's Name:	Kindly provide brief answers to the questions below.
Give a brief summary of the types and the nature of inequalities among members of society	
Briefly cite structural reasons for inequalities	
Briefly explain the challenges your community, your country and the world face with respect to reducing inequalities	
Compare your country with neighbouring countries with respect to various inequalities	
Compare your country with countries on other continents with respect to various inequalities	

TEACHER TO STUDENT EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
The student understands the concept of inequality					
The student understands the various types of inequalities					
The student understands the various reasons for the prevalence of inequalities and the structures underlying them					
The student is aware of the challenges to be faced as we seek to establish equality among all citizens					
The student can identify and propose solutions for the existing challenges to SDG 10: Reducing Inequalities					

PEER EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Classmate evaluating:					
My classmate shows an understanding of the concepts of equality and inequality					
My classmate is aware of the various types of inequalities					
My classmate is aware of the challenges to promoting and implementing equality among all citizens					
My classmate can identify and propose solutions for the existing challenges for SDG 10: Reducing Inequalities					

Videos



“These are the best countries at reducing inequality”

by World Economic Forum (2017)



“10 Best Countries at Sharing Wealth”

by The Daily Conversation (2017)

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Bill Gates: How to Narrow the Gap of Inequality



Why Some Countries Are Poor and Others Rich



The Sustainable Development Goals Explained: Reduced Inequalities.

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- The School of Life. (2014). "Why Some Countries Are Poor and Others Rich" [Video File]. Retrieved from: <https://www.youtube.com/watch?v=9-4V3HR696k>
- The Daily Conversation. (2017). "10 best countries at sharing wealth" [Video File]. Retrieved from: <https://www.youtube.com/watch?v=i53NGThBdoc>
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- World Economic Forum. (2017). "These are the best countries at reducing inequality" [Video Files]. Retrieved from: <https://www.youtube.com/watch?v=ptdqs88Jd5Q>

Readings

Poor concentration: Poverty reduces brainpower needed for navigating other areas of life

by Morgan Kelly, Office of Communications

Aug. 29, 2013 2 p.m.

Poverty and all its related concerns require so much mental energy that the poor have less remaining brainpower to devote to other areas of life, according to **research based at Princeton University**. As a result, people of limited means are more likely to make mistakes and bad decisions that may be amplified by — and perpetuate — their financial woes.

Published in the journal *Science*, the study presents a unique perspective regarding the causes of persistent poverty. The researchers suggest that being poor may keep a person from concentrating on the very avenues that would lead them out of poverty. A person's cognitive function is diminished by the constant and all-consuming effort of coping with the immediate effects of having little money, such as scrounging to pay bills and cut costs. Thusly, a person is left with fewer "mental resources" to focus on complicated, indirectly related matters such as education, job training and even managing their time.

In a series of experiments, the researchers found that pressing financial concerns had an immediate impact on the ability of low-income individuals to perform on common cognitive and logic tests. On average, a person preoccupied with money

1-Poor concentration: Poverty reduces brainpower needed for navigating other areas of life.

How I teach students about equality: only Smarties have the answer

Agnes Arnold-Forster shares her best lesson, engaging young pupils in debates about injustice and equality with the help of chocolate treats



2-How I teach students about equality: only Smarties have the answer.



“Equality: why it matters”

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United Nations. (n.d.). Equality: why it matters. United Nations. Retrieved on March 18, 2018, from: http://www.un.org/sustainabledevelopment/wp-content/uploads/2018/01/16-00055j_Why-it-Matters_Goal10_Equality_new-icon.pdf

11 SUSTAINABLE CITIES AND COMMUNITIES



<http://www.un.org/sustainabledevelopment/cities>

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Unit Author: Javier Pichardo

United Nations Sustainable Development Goal 11: Sustainable Cities and Communities

Summary of SDG 11's Content and Intent

United Nations Sustainable Development Goal 11: (SDG 11) aims to promote the development of Sustainable Cities and Communities. Rapid urbanization is exerting multiple types of pressure on life in cities. Most of the world's cities face problems of overpopulation and constraints on space, infrastructure, fresh water supplies, sewage, housing, education, public health, etc. At the time of writing, in 2017, half of humanity – 3.5 billion people – lives in cities, and by 2030 it is estimated that six out of 10 people will be city dwellers. The world's cities account for 60 to 80% of all energy consumption and 75% of the planet's carbon emissions. Thirty percent of the world's urban population lives in slums, and in Sub-Saharan Africa, over half of all city dwellers are slum dwellers.

What *awareness* should students have acquired by the end of this teaching unit?

Students will gain awareness of the characteristic features of urban dwelling. They will understand the multiple challenges faced as we attempt to shift toward sustainable cities, sustainable communities and sustainable livelihoods. By the end of the unit students will be aware of the problems and the constraints of living in cities. They will be able to propose corrective measures that may be implemented as society moves toward sustainability.

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What *values and attitudes* should students have developed by the end of this teaching unit?

By the end of this unit students will have a general understanding of the current state of development in cities. They will have developed values of environmental stewardship, sustainable living and responsible livelihood. They may become advocates for green technologies. They will see and appreciate the sustainable choices made by others, and they will likely adopt sustainable practices for their own lives, their families and communities.

What *skills* should students have developed by the end of this teaching unit?

By the end of the unit, students should be equipped with skills that help them evolve toward ever-more sustainable lifestyles. The development of these skills begins with environmental consciousness and conscientization. Problem solving, analytical and critical thinking will also be enhanced as students become aware of challenges and seek ways to evolve toward more sustainable urban spaces and lifestyles. Students will apply knowledge acquired by articulation and dissemination of right practices through social engagements with peers and community members.

What *behaviors and lifestyle choices* should students have adopted by the end of this teaching unit?

In addition to the awareness gained, it is hoped that the students will recognize the attributes of sustainability and develop tendencies toward sustainable living. They will adopt and adapt to sustainability and advocate for right and best practices for sustainable living. As responsible and informed members of society students will assume roles as agents of change and sustainable engineers of the future. They will be involved in knowledge dissemination and capacity building with other members of the community.

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What possible *transformative actions* might be put forth to *students' families and communities* by the end of this teaching unit?

Students will communicate with peers, family and community members in order to encourage them to adopt sustainable practices in their day-to-day lives at home, and in their immediate surroundings, neighbourhoods, schools and public places. They will gain confidence, direction and inspiration from youth-led initiatives of other countries; they will be motivated to make solid efforts toward achieving urban sustainability as expressed in SDG 11.

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 11

Theme/Topic:	Lesson Outcomes/Objectives:
Sustainable Cities and Communities	<p>Students will:</p> <ol style="list-style-type: none">1. Understand the impact of architecture and urbanization on their lives and the environment2. Question how the design of the city affects their daily lives and the natural environment3. Question the design of the city and community, reflecting on what can be improved and what has been done right in terms of sustainability and wellbeing4. Identify challenges to developing sustainable cities and communities locally and globally5. Propose options designed to help communities evolve toward sustainable cities and communities

Activities/Tasks:

1. Buildings

1.1 Students will brainstorm on what makes a good building and how buildings affect their daily lives

1.2 The teacher and students will watch and discuss the videos “What Is Sick Building Syndrome?,” “Sick Building Syndrome” and “Why design matters.”

1. Students will go around the school observing, drawing and writing what they think about the school’s design – what they like, what they don’t like, what they find ugly, what they find beautiful, etc. They will brainstorm how to make the school grounds more sustainable

1.4 This exercise will also be applied in their homes

1.5 The teacher and students will watch and discuss the videos “AD Interviews: Alejandro Aravena / Pritzker Laureate 2016”, “Bjarke Ingels “Good design is careful, bad design

is careless””, “Art/Architecture - Dieter Rams”, “How to make an attractive city” and “Tu Delft –Tu Delft | Global Initiative – SDG 11: Sustainable cities and communities”

2. Students will present a proposal, including drawings to one of the school authorities explaining how the school can be made more sustainable

3. City

3.1 Students will brainstorm about how the design of their city affects their lives and the environment.

3.2 The teacher and students will watch and discuss the videos “How to build a better city” and “One Reason Homes Cost So Much” “Adam Ruins Everything–Why jaywalking is a crime”.

3.3 Students will go outside the school and they will walk the city observing, drawing and writing what they think about the city -what they like, what they don’t like, what they find ugly, what they find beautiful, etc.

3.4 Based on their observations, students will brainstorm on how their city can be made more sustainable

3.5 The teacher and students will watch and discuss the videos “How highways wrecked American cities” and “Superblocks: How Barcelona is taking city streets back from cars” “The real reason street cars are making a comeback.”

3.6 Students will create posters describing what they think can be improved in their city, why and how.

3.7 Students will present the posters to other students and school authorities and they will be placed around the school.

4. SDG 11 Sustainable Cities and Communities.

4.1 The teacher and students will watch and discuss the videos “Learning about SDG 11,” “Creating Sustainable Cities,” “What is an Eco City” and “The sustainability challenge explained (through animation)” .

4.2 Based on the videos the students will brainstorm with the teacher, reflecting on the challenges for SDG 9 and possible solutions.

4.3 Students will watch the videos “Water Sensitive Urban Design,” “Berlin is Becoming a Sponge City,” “Detroit Voices: A Community Calls Out for Change,” “Urban Farming Grows in Detroit” and “DIF Animation 1: Regenerative Cities.”

4.4 Students will create posters explaining the challenges and possible solutions for SDG 11.

4.5 Students will present the posters to other students and school authorities explaining their posters, which will be placed around the school.

Note: The teacher will show the posters presented in “Sustainable Communities in NY” and “Goal 11. Sustainable Cities and Communities by Mauro Toselli” to the students as examples.

Teaching materials: (Readings, audio visuals, illustrations, photos, realia)

- “What Is Sick Building Syndrome?” (https://www.youtube.com/watch?v=mmho_iKsfQo)
 - “Sustainable Development Goals Explained: Sustainable Cities & Communities” <https://www.youtube.com/watch?v=j7dzyJTw7Tc>
 - “Why design matters” (<https://www.youtube.com/watch?v=J6LtABooE2c>)
 - “Three ways cities can build sustainable communities for all” <https://www.youtube.com/watch?v=nFn6Eucdq9E>
 - “Art/Architecture - Dieter Rams” (<https://www.youtube.com/watch?v=nXwpm90Gdec>)
 - “How to make an attractive city” (<https://www.youtube.com/watch?v=Hy4QjmKzF1c>)
 - “Sustainable Development Goals Explained: Communities and Resilience” <https://www.youtube.com/watch?v=-K-y83EDmtU>
 - “AD Interviews: Alejandro Aravena / Pritzker Laureate 2016” (<https://www.youtube.com/watch?v=10g60sZqNpg>)
 - “How to build a better city” (<https://www.youtube.com/watch?v=TRb52O76HxQ>)
 - “Partnering with islands for a sustainable world” <https://www.youtube.com/watch?v=Z6B4kBsdp0A>
 - “One Reason Homes Cost So Much” (<https://www.youtube.com/watch?v=dcbjWGj3jB-k&list=PL4LVaXbLZiOYhWLQt8xxamA1GjROHxsE-&index=2>)
 - “How highways wrecked American cities” (<https://www.youtube.com/watch?v=od-F4GSX1y3c&index=6&list=PL4LVaXbLZiOYhWLQt8xxamA1GjROHxsE->)
 - “Superblocks: How Barcelona is taking city streets back from cars” (https://www.youtube.com/watch?v=ZORzsubQA_M&list=PL4LVaXbLZiOYhWLQt8xxamA1GjROHxsE-&index=5)
 - “The real reason street cars are making a comeback” (<https://www.youtube.com/watch?v=RftqoygXXHk>)
 - “Sustainability and Urban Planning | RMIT University” <https://www.youtube.com/watch?v=Lmo6BL2wihw>
 - “Creating Sustainable Cities” (<https://www.youtube.com/watch?v=fcDDUSUbq9A>)
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- “Masdar, the World’s First Eco City | Arts.21” <https://www.youtube.com/watch?v=Ay-D4k8Du83I>
 - “7 principles for building better cities | Peter Calthorpe” <https://www.youtube.com/watch?v=IFjD3NMv6Kw>
 - “Water Sensitive Urban Design” (https://www.youtube.com/watch?v=b_DTnOzYTR4)
 - “Berlin is Becoming a Sponge City” (<https://www.youtube.com/watch?v=uWjGGvY65jk>)
 - “Safer Cities & Urban Development” https://www.youtube.com/watch?v=3KxcJ81SF_k
 - En manuscrito: p. 220
 - “Urban Farming Grows in Detroit”(<https://www.youtube.com/watch?v=b9HVOtN-N8Uc>)
 - “Building a More Climate-resilient Community” <https://www.youtube.com/watch?v=bO59AiGnadM>
 - “Sustainable communities in NY” (https://jeff-tester.cbe.cornell.edu/research/asresh_gut-tikonda_research.html?fref=gc&dti=142461823015892)
 - “Sustainable cities and communities” <http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-11-sustainable-cities-and-communities.html>
-

Key Questions:

- What is the influence that building design has in my life?
 - What is the impact that the city and building design have over me, my community and nature?
 - Is my city well designed? How can I improve it?
 - What are the challenges that SDG 11: Sustainable Cities and Communities faces?
 - How can I apply SDG 11: Sustainable Cities and Communities in my community?
-

Assessment: (Teacher, Peer, Self)

(Please see the assessment rubrics below)

Activities student will apply in his/her personal life.

- Students will keep a diary of the city and design, exploring and expressing new ideas that can make their cities and communities more sustainable.
- Students will take pictures and draw the city and buildings, developing critical thinking about the design of the buildings and their impact on people and the environment.
- Students may start their own personal Urban Farm.

Activities student will apply with his/her community.

- Students will explain the importance, the impact and the need for Sustainable Cities and Communities to adults and other people they know.
- Students will make posters or projects promoting Sustainable Cities and Communities and their advantages.
- Students will continue to innovate and create more functional and responsible designs.
- Students can help create an Urban Farm in their community.

Readings & information sources:

- “James Kunstler: How bad architecture wrecked cities” (<https://www.youtube.com/watch?v=Q1ZeXnmDZMQ>)
- “How Do You Like the Long Emergency So Far? Jim Kunstler at TEDx Albany 2010” (<https://www.youtube.com/watch?v=-zluPQEcK0Y>)
- Bjarke Ingels Will Make You Believe in the Power of Architecture (https://www.youtube.com/watch?v=n9rye_X-qhY)
- “Alejandro Aravena: My architectural philosophy? Bring the community into the process” (<https://www.youtube.com/watch?v=o0I0Poe3qlg>)
- “Triumph of the city: Urbanism and why it matters” (<https://www.youtube.com/watch?v=zSnt0MTMcbw>)
- How to Build a Sustainable City (<https://www.nytimes.com/2015/12/07/opinion/how-to-build-a-sustainable-city.html>)
- 8 ways to build more sustainable communities (<http://www.smartcitiesdive.com/ex/sustainablecitiescollective/8-ways-build-more-sustainable-communities/70701/>)
- Ten quirky ideas for making our cities more sustainable (<https://www.theguardian.com/sustainable-business/2015/apr/16/ten-quirky-ideas-for-making-our-cities-more-sustainable>)

Subject skills utilized:

- Geography
 - Physics
 - Natural Sciences
 - Art and Design
 - Social Studies
 - Natural Sciences
 - Shop
-

Partnerships for the goals: (How can we multiply this and link it at the local, national and international levels? i.e. private sector, government, education, civil society, families)

- Parents
 - School authorities
 - Family
 - Friends
 - Older people
 - Small businesses that students frequent
 - People on the street
 - Government
 - Architects
 - Urban Planners
-

References:

- “James Kunstler: How bad architecture wrecked cities” (<https://www.youtube.com/watch?v=Q1ZeXnmDZMQ>)
 - “How Do You Like the Long Emergency So Far? Jim Kunstler at TEDxAlbany 2010” (<https://www.youtube.com/watch?v=-zluPQEcK0Y>)
 - Bjarke Ingels Will Make You Believe in the Power of Architecture (https://www.youtube.com/watch?v=n9rye_X-qhY)
 - “Alejandro Aravena: My architectural philosophy? Bring the community into the process” (<https://www.youtube.com/watch?v=o0I0Poe3qlg>)
 - “Triumph of the city: Urbanism and why it matters” (<https://www.youtube.com/watch?v=zSnt0MTMcbw>)
 - How to Build a Sustainable City (<https://www.nytimes.com/2015/12/07/opinion/how-to-build-a-sustainable-city.html>)
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- 8 ways to build more sustainable communities (<http://www.smartcitiesdive.com/ex/sustainablecitiescollective/8-ways-build-more-sustainable-communities/70701/>)
 - Ten quirky ideas for making our cities more sustainable (<https://www.theguardian.com/sustainable-business/2015/apr/16/ten-quirky-ideas-for-making-our-cities-more-sustainable>)
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STUDENT SELF-EVALUATION RUBRIC	
Student's Name:	Kindly provide brief answers to the questions below
What are some aspects of my city that are well-designed or poorly designed in terms of human and environmental wellbeing?	
Why is it important for our cities and communities to be sustainable?	
How can I personally help make my home, school and community more sustainable?	
How could I explain the challenges that the world faces today with SDG 11?	

TEACHER TO STUDENT EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
The student understands the need for sustainable urban architectural designs					
The student is aware of the importance of Sustainable Cities for the environment and the community					
The student understands the challenges for developing Sustainable Cities and Communities both locally and globally					

PEER EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Classmate evaluating:					
My classmate understands our community's potential for sustainable design and development					
My classmate is aware of the advantages of transforming our communities toward greater sustainability					
My classmate can distinguish and explain the differences between Sustainable and Non- Sustainable Cities and Communities					

Videos



“What Is Sick Building Syndrome” by Brain-Stuff – HowStuffWorks (2016).



“Sustainable Development Goals Explained: Sustainable Cities & Communities” by United Nations (2015).

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“Why Design Matters” by The School of Life (2015).



“Three ways Cities Can Build Sustainable Communities for All” by World Bank (2018)



“Art/Architecture - Dieter Rams” by The School of Life (2016).



“How to make an attractive city” by The School of Life (2015).



“Sustainable Development Goals Explained: Communities and Resilience” by United Nations (2015).



“AD Interviews: Alejandro Aravena / Pritzker Laureate 2016” by ArchDaily (2016).



“How to build a better city” by MinuteEarth (2014).



“Partnering with islands for a sustainable world”



“One Reason Homes Cost So Much” by The School of Life (2015).



“How highways wrecked American cities” by Vox (2016).



“Superblocks: How Barcelona is taking city streets back from cars” by Vox (2016).



“The real reason street cars are making a comeback” by Vox (2017).

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“Learning about SDG 11” by United Cities and Local Governments (2016).



“Creating Sustainable Cities” by GreenTV (2014).



“Masdar, the World’s First Eco City | Arts.21”



“7 principles for building better cities” | Peter Calthorpe



“Water Sensitive Urban Design” by landscapeinstituteuk (2013).



“Berlin is Becoming a Sponge City” by Bloomberg (2017).

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“Safer Cities & Urban Development”



“Urban Farming Grows in Detroit” by VOA News (2015).



“DIF Animation 1: Regenerative Cities” by Urban Institute, University of Sheffield (2016)

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- landscapeinstituteuk (2013). "Water Sensitive Urban Design" [Video File]. Retrieved from: https://www.youtube.com/watch?v=b_DTnOzYTR4
- MinuteEarth (2014). "How to build a better city" [Video File]. Retrieved from: <https://www.youtube.com/watch?v=TRb52O76HxQ>
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- TED.(2017). "7 principles for building better cities | Peter Calthorpe" [Video File]. Retrieved from: <https://www.youtube.com/watch?v=IFjD3NMv6Kw>
- The School of Life (2016). "ART/ARCHITECTURE - Dieter Rams" [Video File]. Retrieved from: <https://www.youtube.com/watch?v=nXwpm90Gdec>
- The School of Life (2015). "How to make an attractive city" [Video File]. Retrieved from: <https://www.youtube.com/watch?v=Hy4QjmKzF1c>
- The School of Life (2015). "One Reason Homes Cost So Much" [Video File]. Retrieved from: <https://www.youtube.com/watch?v=dcbjWGj3jBk&list=PL4LVaXbLZiOYhWLQt8xx-amA1GjROHxsE-&index=2>
- The School of Life (2015). "Why Design Matters" [Video File]. Retrieved from: <https://www.youtube.com/watch?v=J6LtABooE2c>
- United Nations Development Programme (UNPD).(2017). "Building a More Climate-resilient Community" [Video File]. Retrieved from: <https://www.youtube.com/watch?v=bO59AiGnadM>
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- United Nations.(2015). "Sustainable Development Goals Explained: Communities and Resilience" [Video File]. Retrieved from: <https://www.youtube.com/watch?v=-K-y83EDmtU>

Vox (2016). “How highways wrecked American cities” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=odF4GSX1y3c>

Vox (2016). “Superblocks: How Barcelona is taking city streets back from cars”. Vox. Retrieved from: https://www.youtube.com/watch?v=ZORzsubQA_M

Vox (2017). “The real reason street cars are making a comeback” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=RftqoygXXHk>

VOA News (2015). “Urban Farming Grows in Detroit” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=b9HVOtNN8Uc>

World Bank.(2018). “Three ways cities can build sustainable communities for all” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=nFn6Eucdq9E>

Readings



“How to Build a Sustainable City” by Jaime Lerner / NY Times (2015).



“8 ways to build more sustainable communities” by futurecaptown / smartcitiesdive (2012).



“Ten quirky ideas for making our cities more sustainable” by Oliver Balch / The Guardian (2015).

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Jaime Lerner (2015). “How to Build a Sustainable City”. NY Times. Retrieved from: <https://www.nytimes.com/2015/12/07/opinion/how-to-build-a-sustainable-city.html>

Oliver Balch (2015). “Ten quirky ideas for making our cities more sustainable”. The Guardian. Retrieved from: <https://www.theguardian.com/sustainable-business/2015/apr/16/ten-quirky-ideas-for-making-our-cities-more-sustainable>

Images



“Sustainable cities and communities” by
United Nations Development Programme



“Goal 11: Sustainable cities and communities” by Margreet de Heer (2015)

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“Goal 11: Sustainable cities and communities” by UN India (N/A)



Sustainable Communities in NY by Cornell University (N/A)



Fases de una ciudad by Ciudades Sostenibles (2017)

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- Margreet de Heer (2015). “Goal 7: Affordable and Clean Energy” [Digital Image].Retrieved from: <http://www.margreetdeheer.com/eng/globalgoals.html>
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- UN India.(N/A). “Goal 11: Sustainable cities and communities” [Video File]. Retrieved from: <http://in.one.un.org/page/sustainable-development-goals/sdg-11/>

12 RESPONSIBLE CONSUMPTION



<https://sdgcompass.org/sdgs/sdg-12/>

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Unit Author: Cristian López

United Nations Sustainable Development Goal 12: Responsible Consumption and Production

SDG 12's Content and Intent

The present teaching unit helps sensitize students and build their awareness of current trends in production and consumption. Some of the steps required include promoting the efficient management of natural resources and adopting safer means to dispose of toxic waste and pollutants. Alternative and innovative strategies for recycling and waste reduction become equally important. Students will reflect on current practices regarding food consumption. They will explore healthy ways to produce and consume food in order to reduce waste. The environmentally sound management of chemicals and waste materials throughout their life cycle also becomes important in this context. Students will recognize the role of industries in contributing to pollution; they will identify mechanisms for reducing the level of hazardous chemicals in air, water and soil. They will develop an understanding of the need to practice sustainable lifestyles.

What *awareness* should students have acquired by the end of this teaching unit?

Students will develop an understanding of unhealthy consumption trends found in modern society. They will explore safe and healthy practices with regard to making the right consumer choices; they will further analyze the significance of responsible production.

What *values and attitudes* should students have developed by the end of this teaching unit?

By the end of the unit students should have a general understanding of the prevalence of unhealthy production-consumption practices and their harmful consequences. They should have developed values of science consciousness, scientific temperament, responsible livelihood and accountability. The authors are confident that this understanding will lead students to adopt values and attitudes that will enable them to be role models for sustainable thinking and sustainable lifestyles in their community.

What *skills* should students have developed by the end of this teaching unit?

By the end of the unit, students will have developed analytical and critical thinking concerning healthy consumption and production practices. Problem-solving and decision-making skills will also be enhanced. Students will apply knowledge acquired by articulation and dissemination of right practices through social engagements

What *behaviors and lifestyle choices* should students have adopted by the end of this teaching unit?

In addition to the awareness gained, it is expected that students will recognize how consumption is linked to sustainability, and they will be concerned about unsustainable consumption practices. As responsible and informed members of society, they will assume roles as agents of change and sustainable engineers of the future. After the unit, students will have adopted and identified wise and right choices about food and sustainable lifestyles. They will be advocates for sound and sustainable waste management techniques; they will be proficient in building the capability of other community members as well. Once students gain confidence and realize that they can make a difference in the ecological balance of the planet, they will be motivated to work to achieve the goals targeted for SDG 12.

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What possible *transformative actions* might be put forth to *students' families* and communities by the end of this teaching unit?

Students will communicate with peers, family and community members in order to encourage others to do their part toward living healthily through sound and wise food choices, and through adopting scientifically sound techniques for waste reduction. Case studies from global contexts and actions by countries worldwide to reduce solid and chemical waste will further sensitize students, their families and the community about the concerns expressed in SDG 12. Students are further encouraged to organize and carry out activities with friends, family and community members which promote awareness and lifestyle changes toward right food choices, and toward reducing and eliminating waste at the level of the household, school and neighbourhood.

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 12

Theme/Topic:

Responsible consumption and production

Lesson Outcomes/Objectives:

1. Students will acquire knowledge enabling them to make good consumer choices
 2. Students will be able to explain what responsible production entails
-

Activities/Tasks:

Introduction. Video: “The price of materialism” (listed below).

1. Essential Needs and Created Needs Exercise: Individually, students will make a list of things that they consider necessary for living and another list of the things they own, use or consume that are not necessary (commodities and luxuries). They will share the lists with classmates. Teacher and classmates will compile the individual lists so that the ideas of the whole group are reflected. Discussion will be necessary when disagreements arise on whether things are necessary for living or not.

1.2 From the Essential Needs list students will choose one item. They will create a scale ranging from having/using in excess to having/using too little to be useful. In this scale, students will make an effort to place themselves and their consumption/usage behaviors on it according to their lifestyle.

1.3 Students will brainstorm ways to reach a compromise between the Necessary Things List and the Commodities & Luxuries List.

1.4 View Video “SDG 12 Responsible Consumption and Production” (listed below) as a Conclusion for the aforementioned activities.

2. Video “SDG 12- Responsible Consumption and Production- Ted Talks” (listed below) – Used to introduce the topic of Responsible Production.

2.1 Students will brainstorm in order to identify the main economic activities found in their community and their country. Each student will choose one activity and find out 1) what raw materials are required for its production, 2) how are they transported to the production site, and at what cost? 3) What are the production processes, and what costs are required for production? 4) What waste is produced from the production process and how is it disposed of? 5) How does the product reach the consumer market and at what cost? 6) What happens

to the product when the user disposes of it? 7) What impacts does this have on the natural environment?

2.2 Students will write an essay that 1) summarizes and explains the 7 Steps mentioned above. 2) proposes ways to make these processes a) more efficient, 2) less costly, 3) less harmful for the natural environment.

2.3 Video: “The Story of Electronics (2010)” (listed below)

2.4 Reading: “Responsible Production” (listed below)

Materials and readings:

- “The Story of Electronics (2010)” https://www.youtube.com/watch?v=sW_7i6T_H78

- “Are you eating plastic for dinner?” <https://video.nationalgeographic.com/video/short-film-showcase/are-you-eating-plastic-for-dinner?source=searchvideo>

- “SDG 12 Responsible Consumption and Production” <https://www.youtube.com/watch?v=KFkM-s6hBsM>

- “SDG 12- Responsible Consumption and Production- Ted Talks” <https://www.youtube.com/watch?v=dR0dzsFxjXc&fref=gc&dti=142461823015892&app=desktop>

- “Sustainable Development Goal #12 | Responsible Consumption and Production | Youth4GlobalGoals” <https://www.youtube.com/watch?v=6YupFzmIjr4>

- “#GlobalGoals 12: Responsible Consumption and Production - Can you make it happen?” [https://www.youtube.com/watch?v=EdkDiUAAeGY-Responsible Production](https://www.youtube.com/watch?v=EdkDiUAAeGY-Responsible%20Production) <http://businesscasestudies.co.uk/business-theory/operations/responsible-production.html>

Key Questions:

-What is consumerism?

-What is responsible production?

-What are the impacts of consumerism on human and planetary wellbeing?

-How does a wasteful lifestyle affect the planet?

-What are alternatives to a materialistic lifestyle?

-What are the positive consequences of responsible consumption and responsible production?

Assessment: (Teacher, Peer, Self)

Kindly find the assessment documents below

Activities student will apply in his/her personal life.

- Students will try to repair and reuse broken things instead of throwing them away and replacing them.
- Students will think twice before buying things that are not a necessity.
- Students will search for items produced by responsible companies.

Activities student will apply with his/her community.

- Students will engage in open communication about responsible consumption with family and friends.
- Students will create publicity and encourage others to make use of recycling facilities and services their community provides.
- Students will encourage more people to join organizations that watch over companies and government to regulate production.

Readings & information sources:

- “Consumers can be the vanguards of sustainability” <https://unu.edu/publications/articles/consumers-vanguards-sustainability.html?fref=gc&dti=142461823015892>
- Goal 12: Ensure sustainable consumption and production patterns <http://www.un.org/sustainabledevelopment/sustainable-consumption-production/?fref=gc&dti=142461823015892>
- Introducing the Global Sustainable Consumption & Production (SCP) Clearinghouse <https://www.youtube.com/watch?v=xLWB7LJPckQ>

Subject skills utilized:

- Natural Sciences
- Ethics
- Social Studies
- Civics
- Art

Partnerships for the goals:

Students can reach out to their local communities through the neighborhood council, town meetings, the local government, etc. in order to promote local consumption and sustainable production.

Resources/Organisation:

Sustainable Development Knowledge Platform <https://sustainabledevelopment.un.org/sdg12>

UN Sustainable Development <http://www.un.org/sustainabledevelopment/sustainable-consumption-production/>

Fair Trade International <https://www.fairtrade.net/>

STUDENT SELF-EVALUATION RUBRIC

Student's Name:

Kindly provide short answers to the questions below.

How can I explain the relationship between consumerism, waste and the environment?

What aspects of my life can I change to avoid excessive consumerism?

What are the impacts of responsible consumption?

What are the impacts of responsible production?

How can we best ensure responsible production? Responsible consumption?

TEACHER TO STUDENT EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
The student recognizes what is a consumeristic lifestyle					
The student identifies the necessary actions to practice responsible consumption					
The student can identify the positive impacts of responsible production					

PEER EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Classmate evaluating:					
My classmate is able to explain the concept of consumerism					
My classmate shows an awareness of how to practice responsible consumption					
My classmate is able to identify the positive impacts of responsible production					

Videos



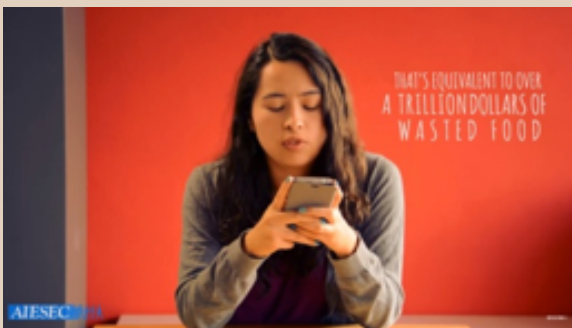
“SDG 12: Responsible Production and Consumption” by What can you do



“SDG 12: Responsible Consumption and Production TED Talks” by Let’s Change



“Introducing the Global Sustainable Consumption & Production (SCP) Clearing-house”



“Sustainable Development Goal #12 | Responsible Consumption and Production | Youth4GlobalGoals” by AIESEC (2016)



“Are you eating plastic for dinner? by National Geographic (n.d)



“#GlobalGoals 12: Responsible Consumption and Production - Can you make it happen?”

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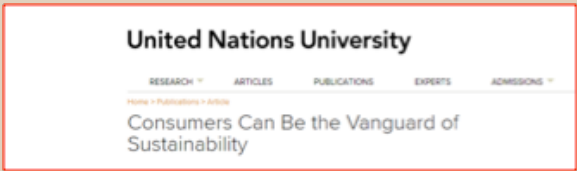
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UN Environment.(2013). “Introducing the Global Sustainable Consumption & Production (SCP) Clearinghouse” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=xLWB7LJPckQ>

Unilever.(2015). “#GlobalGoals 12: Responsible Consumption and Production - Can you make it happen?” [Video File]. Retrieved from: <https://www.youtube.com/watch?v=Ed-kDiUAAeGY>

What Can You Do.(2017). “SDG 12 Responsible Consumption and Production” [Video File]. Retrieved October 18, 2017, from <https://www.youtube.com/watch?v=KFkM-s6hB-sM&feature=youtu.beChromeHTMLShellOpenCommand>

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“Consumers can be the vanguard of sustainability” by Zafar Adeel



“Ensure Sustainable Consumption and Production Patterns” by UN.



“Responsible Production” by Business Case Studies.

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United Nations. (n.d.). Sustainable consumption and production. United Nations. Retrieved October 18, 2017, from <http://www.un.org/sustainabledevelopment/sustainable-consumption-production/?fref=gc&dti=142461823015892>

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“SDG 12 Sustainable Consumption and Production”. By UN Indonesia.



“No title” By Food Day Organization.



“SDG 12: Responsible Production and Consumption”by Margreet de Heer.

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- Getty Images. (n.d.). No title [Image regarding Sustainable Development 12]. Retrieved October 18, 2017, from <http://www.globalgoals.org/global-goals/responsible-consumption/>
- Toselli, M. (2016, August 28). Goal 12. Responsible Consumption and Production [Digital image]. Retrieved October 18, 2017, from <https://www.flickr.com/photos/xlontrax/29204234571/in/album-72157672078902171/>
- UN Indonesia. (n.d.). Goal 12. Responsible Consumption and Production [Digital image]. Retrieved October 18, 2017, from <http://www.un.or.id/what-we-do/sustainable-development-goals-sdgs/19-sdg/102-goal-12-responsible-consumption-and-production?fref=gc&dti=142461823015892>

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13 CLIMATE ACTION



Source: <http://www.un.org/sustainabledevelopment/climate-change-2/>

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Unit Author: Cristian López

United Nations Sustainable Development Goal 13: Climate Change

Summary of SDG 13's Content and Intent

The teaching unit on SDG 13 will sensitize students and create consciousness of the impacts of climate change on the planet and all its creatures. The impacts of climate change, such as today's mega-storms, and the urgent warnings of the scientific community have become a formidable call for change in human practices and a rethinking of the perpetual growth imperative which strips away natural resources for production at a rate much faster than they can be replenished. Environmental disasters have succeeded in changing relief features making it appear not as temporary events but as changes that last. The World Meteorological Organization also noted that the extent of global sea ice fell to a minimum of 4.14 million km² in 2016, the second lowest extent on record. Atmospheric carbon dioxide levels also reached a record high of 400 parts per million that year. Mitigating climate change and its impacts will require that we build on the momentum achieved by the Paris Agreement on Climate Change, which entered into force on November 4, 2016.

This unit will educate students on the issues of climate change, the reasons for its occurrence and what can be done to reduce or eliminate it altogether. As future torch bearers of the human race, today's younger generations will assume responsibility for ensuring the longevity of planet Earth through safe and environmentally friendly practices.

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What *awareness* should students have acquired by the end of this teaching unit?

Students will understand how climate change works, and the impacts it has on the environment and human life. They will reflect about how their personal behaviors, habits and lifestyles impact on the climate. Also, students will understand how climate change correlates with natural disasters, which will lead them to recognize the importance of disaster preparedness. Students will be able to develop disaster-preparedness schemes for diverse types of natural disasters. Finally, they will understand and propose options and alternatives for a sustainable lifestyle.

What *values and attitudes* should students have developed by the end of this teaching unit?

By the end of this unit, students should have a general understanding of climate change; they will be able to cite underlying reasons and identify steps that need to be taken to face the consequences of climate change. They will have developed values of concern for the environment, and undertake steps for remedial action and safeguarding the health of planet Earth. Reducing the use of fossil fuels, and stopping the use of plastics will enable students to become role models for sustainable lifestyles and thinking.

What *skills* should students have developed by the end of this teaching unit?

By the end of the unit it is hoped that students will develop skills of judging practices and thinking concerning issues related to climate change. Problem solving and decision-making skills will also be enhanced. Students will apply knowledge acquired by articulating and disseminating right practices through social engagements.

What *behaviors and lifestyle choices* should students have adopted by the end of this teaching unit?

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In addition to the awareness gained, it is hoped that the students will recognize how climate change is associated to irresponsible human actions. As responsible and informed members of society, they will assume roles as agents of change and sustainable engineers of the future. By the end of the unit, students will identify and adopt wise and right approaches to environment and ideal practices, which will help to some extent to undo the effects of climate change, such as global warming, rising sea levels, the melting of ice, etc. Furthermore, they will adopt sustainable lifestyles. They will be advocates for sound and sustainable lifestyles, and will be proficient in building the capacity of other people of the community too. Once students gain confidence and realize that they can through individual choices and practices make a difference in the ecological balance of the planet, they will be motivated to behave responsibly toward achieving the goals targeted for SDG 13.

What possible *transformative actions* might be put forth to *students' families and communities* by the end of this teaching unit?

Students will be encouraged to communicate with peers, family and community members with regard to encouraging others to do their part toward healthy living, making responsible choices and adopting scientifically sound techniques to reduce climate change. Case studies from global contexts and steps taken by countries worldwide to reduce climate change will further sensitize students to the issue of climate change. Awareness building of safe and scientifically sound lifestyles will contribute to students imbibing and adopting best practices for emulation and replication. They are further encouraged to organize and carry out activities with friends, family and community that promote awareness and lifestyle changes towards right behavioural actions.

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 13

Theme/Topic:

Climate Action

Lesson Outcomes/Objectives

1. Students will understand how climate change works, and the impacts it has on the environment, climate and on human life
 2. Students will reflect about how their personal behaviors, habits and lifestyles impact the environment
 3. Students will recognize the importance of disaster preparedness
 4. Students will be able to develop disaster-preparedness schemes for diverse types of natural disasters
 5. Students will be able to propose alternatives for a sustainable lifestyle
-

Activities/Tasks:

Introduction: “Video Climate Change 101 with Bill Nye | National Geographic” (listed below)

Climate change

1. Videos: “Climate change explained in under 2 minutes” and “A blanket around Earth”(listed below)

1.1 Taking into account the previous videos, the class will brainstorm in order to identify all the changes in weather and in landscape they’ve seen in their community or country

1.2 From the aforementioned climatic changes, each student will choose one and write or draw all the factors they think have led to that change. They will discuss the possible consequences of each climatic event they have mentioned

1.3 Video: “How climate change makes hurricanes worse” (listed below)

2. Students will read “What is a carbon footprint” and watch the video “Household electricity and carbon footprint” (listed below).

2.2 Students will calculate their personal ecological footprint in a Footprint Calculator (listed in Teaching Materials).

2.3 According to their personal results and to suggestions made by the Footprint Calculator, students will write down the things they can do to reduce their personal Carbon Footprints, what can be done by talking to their families, and what is tentatively beyond their reach

Natural disasters

3. Videos. “Natural disasters” (listed below).

3.1 Students will identify severe climate events that can or have occurred in their communities. They will walk around their schools listing every place or object they notice that might pose a hazard in a disaster

3.2 Videos. “Act Now, Save Later- Invest in Disaster Preparedness” “Bellevue OEM - Ways to Survive (Animated Video)” (listed below)

4. Students will think of areas of opportunity to improve/create security measures and/or ideas to be prepared for natural disasters. Students will make a drawing or a poster with the ideas and present it in class

4.1 Students’ disaster-preparedness artwork will be posted in the classroom and around the school grounds

5. With their own communities in mind, students will gather in teams to discuss about building sustainable communities. Each team will choose one of the following topics: Location, water resources, food resources, energy resources and waste management. Taking into account what they have learned from this unit and previous ones, each team will create and discuss their own community in terms of the topics and each team will present their plans to their classmates.

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Teaching materials: (Readings, audio visuals, illustrations, photos, realia)

- Video Climate Change 101 with Bill Nye | National Geographic <https://www.youtube.com/watch?v=EtW2rrLHs08>

- Global climate change: Causes <https://climate.nasa.gov/causes/>

- How climate change makes hurricanes worse https://www.youtube.com/watch?v=_0T-CrGtTEQM&t=14s

- What is a carbon footprint? <https://www.theguardian.com/environment/blog/2010/jun/04/carbon-footprint-definition>

- Household and Carbon Footprint <https://www.youtube.com/watch?v=hfH4JXixa1s>

-
- Footprint calculators (UK) http://footprint.wwf.org.uk/home/calculator_complete. (USA) <https://www3.epa.gov/carbon-footprint-calculator/> (General public) <https://www.carbonfootprint.com/calculator.aspx>
 - Severe Weather: Crash Course Kids #28.2 <https://www.youtube.com/watch?v=QVZEx-LO0MWA&t=2s>
 - Act Now, Save Later- Invest in Disaster Preparedness <https://www.youtube.com/watch?v=HhD85cQejTg>
 - Bellevue OEM - Ways to Survive (Animated Video) <https://www.youtube.com/watch?v=aci5kB0v78I&t=42s>
-

Key Questions:

Assessment: (Teacher, Peer, Self)

- What is climate change?
- How do human activities affect climate change? Listed Below
- What are the personal choices which may contribute positively or negatively in climate change?
- What steps can I take to be prepared for natural disasters?
- How can I help my family and community with disaster-preparedness?
- What elements are required for an individual, family and community to reach a genuinely sustainable lifestyle? (Remember to include human, environmental and economic concerns in your sustainable living answer).

Activities student will apply in his/her personal life

- Students will make changes in their lifestyles which contribute to mitigating climate change. They will keep a diary reflecting on the changes implemented and the impacts these have had on their lives, the families and their communities.
- Students will make contingency plans for natural disasters.
- Students will involve their families in making lifestyle changes.

Activities student will apply with his/her community

- Students will discuss with friends and neighbours about climate change.
- Students will initiate discussions for making community plans to be prepared for natural disasters.
- Students will promote sustainable lifestyles in their community. They will lead by example.

Readings & information sources:

- Goal 13: Take urgent action to combat climate change and its impacts <http://www.un.org/sustainabledevelopment/climate-change-2/>
- How to Talk to Your Kids about Climate Change <https://www.1millionwomen.com.au/blog/how-talk-your-kids-about-climate-change/>
- Goal 13—Taking Urgent Action to Combat Climate Change—SDGs and the Paris Climate Agreement <https://unchronicle.un.org/article/goal-13-taking-urgent-action-combat-climate-change-sdgs-and-paris-climate-agreement>
- When will humans be horrified by climate change? When the media give it the coverage it deserves <http://www.latimes.com/opinion/readersreact/la-ol-le-climate-change-brains-media-20170922-story.html>

Subject skills utilized:

- Natural Sciences
- Social Studies
- Civics
- Geography

Local, national and international partnerships for SDG 13 i.e. private sector, government, education, civil society, families. (How can we multiply this and prepare drills for the community?)

- Get in touch with neighbourhood councils for making disaster-preparedness plans
-

-
- Reach the local government to make local contingency plans
 - Invite family businesses to get involved
 - Search for local libraries, hospitals and schools to participate as rendezvous points in case of an emergency
-

Resources/Organisation:

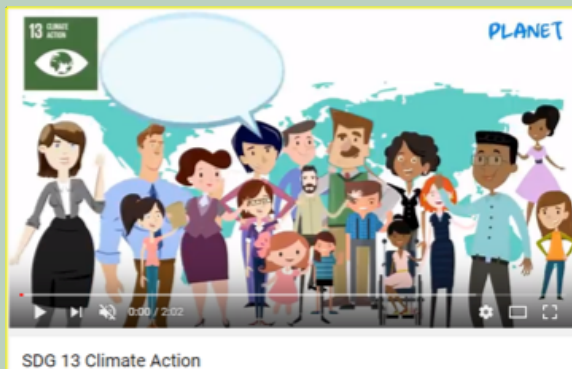
UN: Sustainable Development Goals <http://www.un.org/sustainabledevelopment/>

STUDENT SELF-EVALUATION RUBRIC	
Student's Name:	Please answer yourself
Why is it important to be aware about climate change?	
In what manner am I able to make positive lifestyle and behavioral changes in order to tackle climate change?	
In what ways are my personal choices partially responsible for climate change?	
How can planning for natural disasters benefit my community?	

TEACHER TO STUDENT EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
The student fully understands what climate change is					
The student understands the role of human action in climate change					
The student can perceive his/her own role in climate change					
The student knows what are the primary climate-related hazards that can pose a threat to humanity					
The student understands the importance of disaster preparedness					

PEER EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Student evaluating:					
My classmate is able to explain climate change in broad terms					
My classmate understands how s/he contributes to climate change both positively and negatively					
My classmate is able to explain the importance of planning and constructing in preparation for natural hazards					

Videos



“SDG 13” Climate Action by What can you do?



“Natural disasters” by BBC Earth



Climate Change 101 with Bill Nye | National Geographic by National Geographic

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SDG 13 – Climate Change Action – Ted Talks by Let's Change



Household electricity and Carbon Footprint

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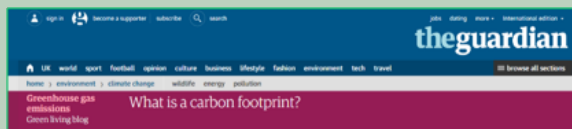
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What Can You Do. (2017). SDG 13 Climate Action [Video file]. Retrieved from <https://www.youtube.com/watch?v=HvvuUjDV6M8&feature=youtu.be>

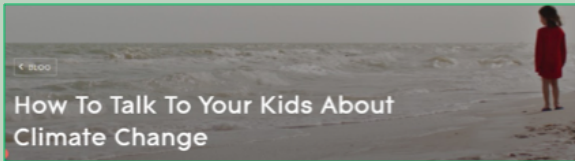
Articles



What is a carbon footprint? By Mark Berners-Lee and Duncan Clark



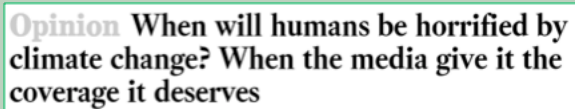
Goal 13: Take urgent action to combat climate change and its impacts. By UN



How to talk with your children about climate change. By Eva Davis-Boermans



Goal 13—Taking Urgent Action to Combat Climate Change—SDGs and the Paris Climate Agreement. By Christina Figueres



When will humans be horrified by climate change? When the media give it the coverage it deserves. By Pam Brennan

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UN Sustainable Development Platform. (n.d.). Goal 13: Take urgent action to combat climate change and its impacts. Retrieved from <http://www.un.org/sustainabledevelopment/climate-change-2/>

Illustrations

The Global Goals By Getty Images





Goal 13: Climate Action by Margreet de Heer



No title, by Global Goals



“13 Climate Action” by María Albillos



Goal 13: Take urgent action to combat climate change and its impacts by Mauro Toselli

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- Getty Images. (n.d.). *Global Goals* [Digital image]. Retrieved October 29, 2017, from <http://www.globalgoals.org/global-goals/protect-the-planet>
- Getty Images. (n.d.). *No title* [Digital image]. Retrieved October 29, 2017, from <http://www.globalgoals.org/global-goals/protect-the-planet/>
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Unit Author: Jesús López

United Nations

Sustainable Development Goal 14:

Life below Water

Summary of SDG 14's Content and Intent

Two-thirds of the Earth's surface is comprised of water- being either from the fresh water or the salt water systems. Oceans constitute the largest of the Earth's ecosystems and therefore, the sustenance of seas and oceanic bodies is of utmost importance. SDG 14 has recognized the significance of water and has listed Goal 14 as a call for conserving water and ensuring its sustainable usage. It further aims to minimize threats like acidification, overfishing and water pollution. Pollution and excess amounts of nutrients in water can lead to dense plant growth and the death of animal life from lack of oxygen. Overfishing reduces food production and harms the balance of life in the oceans which, in turn, harms the water and oxygen cycles.

In the present unit, students will become aware of the challenges presented to life below water in the oceanic and the freshwater environments. They will identify the consequences of not caring for fresh water and oceanic resources and will be motivated to help create social awareness about human impacts on oceanic and freshwater resources based on current practices.

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What *awareness* should students have acquired by the end of this teaching unit?

Awareness of the planetary water cycle and its impact on human life will be acquired. Concepts related to living organisms found in water bodies, their roles in the food chain, and knowledge of the water cycle will be attained by the end of the lesson. Knowledge about microorganisms inhabiting water bodies, their role in water purification, in oxygen production and in the food chain will make students realize the importance of sustaining plant and animal life in the oceans, seas, lakes and rivers. Knowing the dangers of polluted water bodies will encourage them to think about solutions and immediate practices to be adopted for a safe Earth with safe and healthy water bodies. Students' engagement in educating the society,

community and neighborhoods will contribute to knowledge and skills transfer related to sustainable practices regarding water health and conservation.

What *values and attitudes* should students have developed by the end of this teaching unit?

By the end of this unit students will develop a general understanding of the ecosystems and the organisms entailed in the topic of life below water. The values of harmonious coexistence, cohabitation and respect for natural resources will be instilled throughout the lesson. Students will become empowered and they will be capable of contributing toward safe and healthy water resources. Knowledge and respect for aquatic life will be instilled, and the authors are confident that this understanding will lead students to adopt conservation-oriented values and attitudes. Some may decide to seek future employment in water-based industries like fishing, pearl and prawn culture with an orientation that helps convert these livelihoods into sustainable occupations.

What *skills* should students have developed by the end of this teaching unit?

Skills developed through this unit include knowledge generation and dissemination, problem-solving, decision-making, formulating judgments and undertaking projects toward the sustainable use of water. Students will develop the capability to suggest orientations and directions for reducing risks, minimizing threats and enhancing the potential of water as a viable renewable natural resource that must be deeply valued and conserved.

What *behaviors and lifestyle choices* should students have adopted by the end of this teaching unit?

Students will create awareness of the importance of water ecosystems and life below water by telling friends, family and community members about the effects of human activities on the planet's water ecosystems. They will develop ideas for solving water ecosystems issues within their social circle. Together with family members, friends and neighbors, students will strive to create awareness on how we can all commit and act to protect life below water and aquatic ecosystems. In addition to the awareness gained, it is hoped that the students as consumers, will highlight the best practices for utilization of oceans as a food resource.

What possible *transformative actions* might be put forth to *students' families and communities* by the end of this teaching unit?

Students will be equipped with skills in knowledge generation, dissemination and awareness-building among the school community, family and members of the society. Green practices and technologies attempted elsewhere will help to motivate and inspire good practices and discourage harmful ones in the locality. Students will be better equipped to offer solutions and eliminate consequences of mismanagement like the Great Pacific Garbage Patch by taking the right action and corrective measures to protect water bodies in their local environments.

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 14

Theme/Topic:

Life below Water

Water Cycle- Fresh water, lakes, rivers, streams, glaciers, industrial, domestic and human waste

Lesson Outcomes/Objectives

1. Students will understand the planetary water cycle, how it impacts on human life, and the impacts that humans have on life below water
2. Students will become aware of how much we depend on life below water and on oceanic and freshwater resources
3. Students will understand how life on land depends on the water-based food chain, and how we rely of water-based phytoplankton for producing large amounts of oxygen and sustaining the food chain
4. Students will become aware of the problems that life below water is facing in the oceanic and the freshwater environments
5. Students will become aware of the consequences of not caring for fresh water and oceanic resources
6. Students will help create social awareness about human impacts on oceanic and freshwater resources with our daily lives and actions
7. Students will communicate proposals to decelerate damage and to help recover oceanic and freshwater life and environments

Activities/Tasks:

1. Familiarize Students with SDG 14

1.1 Review the water cycle system of planet Earth

1.2 Brainstorm sources of fresh water, how they service human needs and how they are related to oceanic environments and cycles

1.3 Students will identify how we obtain fresh water and the uses it has 1) for the human community and 2) beyond just supplying humans

- View NASA | Show Me the Water <https://www.youtube.com/watch?v=4HSFKwho7MQ>

- Fresh water scarcity: An introduction to the problem - Christiana Z. Peppard <https://www.youtube.com/watch?v=otrpxtAmDAk>

Videos to create awareness in students

- Show video “Will the ocean run out of fish?” <https://www.youtube.com/watch?v=vWEAd4HLV-g>

-Students will become aware of the actual situation of overfishing and its effects on the natural ecosystem below water

What is water pollution <https://www.environmentalpollutioncenters.org/water/>

-Show video of “What really happens to plastic you throw away” https://www.youtube.com/watch?v=_6xlNyWPpB8

-Students will become aware of daily life activities that have an effect on the water ecosystem.

1.4 After viewing the videos, students will develop a mind map about how to reduce or eliminate the misuse of water.

2. Research activities on local water streams, rivers, lakes and beaches (As available)

2.1 Through on-site research, students will discover levels of pollution of natural water supplies in their localities

2.2 In the classroom, students will discuss what they found and explain their research findings

2.3 Students will propose ideas for improving the conditions of life below water and water resources where they did their research

2.4 Students will interact with their community, family, friends and classmates to create awareness of what we are doing to the water habitat

3. Offer/propose ideas for sustainable water management

3.1 Show video of “Acuaponics” <https://www.youtube.com/watch?v=QKIH2dBhGe4>

4. Students will reflect on how to decelerate, improve, and reverse the negative effects that humans have on water sources and life below water

4.1 Students will write a reflection piece on how humans can actively improve the conditions of life below water

4.2 They will reflect on how humans, oceanic and freshwater ecosystems can coexist without causing damage

4.3 They will analyze and propose the best usage of freshwater sources

4.4 Include ideas on sustainable management of water and aquatic life as natural resources

Teaching materials: (Readings, audio visuals, illustrations, photos, realia)

Videos:

- Fresh water scarcity: An introduction to the problem - Christiana Z. Peppard <https://www.youtube.com/watch?v=otrpxtAmDAk>
- NASA | Show Me the Water <https://www.youtube.com/watch?v=4HSFKwho7MQ>
- “What really happens to plastic you throw away?” https://www.youtube.com/watch?v=_6x-lNyWPpB8
- “How much trash is in the ocean?” https://www.youtube.com/watch?annotation_id=annotation_585288167&feature=iv&src_vid=vWEAd4HLV-g&v=hfwmlps0Lco
- “How much plastic is in the ocean?” <https://www.youtube.com/watch?v=YFZS3Vh4lfl>
- What is water pollution <https://www.environmentalpollutioncenters.org/water/>
- “Aquaponics DIY Eco-Garden 10 Gallon Fish Tank Kit” <https://www.youtube.com/watch?v=QKIH2dBhGe4>

Illustrations

- “Goal 14: Life below Water” <http://cdn.globalgoals.org/2015/09/Goal-14-V21-640x452.jpg>
 - “ONE; Life Below Water” <https://www.one.org/us/globalgoals/life-below-water/>
 - “Flicker; Goal 14, Life Below Water” <https://www.flickr.com/photos/xlontrax/28660260284/in/album-72157672078902171/>
-

Key Questions:

- What constitutes life below water in the freshwater environment? In the oceanic environment? How are they interrelated?
- What are some of the human-induced problems faced in conserving life below water and water-based ecosystems?
- What contributions can I make to help solve these issues?
- How can I make people in my social circle aware of the problems and solutions concerning water and aquatic life?

Assessment: (Teacher, Peer, Self)

Evaluation tables/charts are provided after the lesson plan format

Activities student will apply in his/her personal life

- Students will make a mind map on the impact of overexploitation, degradation and the pollution that humans are causing to planetary water systems and life below water
- Students will give ideas on how we can solve the effects we are having on the aforementioned
- Students will propose ways to use freshwater resources conscientiously, by not wasting water and thinking of how to best conserve it

Activities student will apply with his/her community

- Students will create awareness on the importance of water systems and life below water by telling friends, family and community members about the effects of human activities on the planet's water ecosystems
- They will develop ideas for solving these issues within their social circle
- Together with family members, friends and neighbors, students will strive to create awareness on how we can all commit and act to protect life below water and aquatic ecosystems

Readings & information sources:

"Impacts of Overfishing on Human Lives" http://marinesciencetoday.com/.../impact-of-overfishing...

"Your cool tips on overfishing" <http://www.eschooltoday.com/.../impact-of-overfishing.html>

"Conserve and sustainably use the oceans, seas, and marine resources for sustainable development" <https://www.one.org/us/globalgoals/life-below-water/>

“Conserve and sustainably use the oceans, seas, and marine resources for sustainable development” <http://datatopics.worldbank.org/.../SDG-14-life-below..>

“Goal 14: Conserve and sustainably use the oceans, seas and marine resources” <http://www.un.org/sustainabledevelopment/oceans/>

Subject skills utilized:

- Civic and Ethics
 - Administration
 - Geography
 - Biology
 - Natural Sciences
 - Social Studies
 - Arithmetic
-

Partnerships for the goals: (How can we multiply this and link it at the local, national and international levels? i.e. private sector, government, education, civil society, families)

- Students will create awareness in the social system concerning natural water supplies and pollution, oceanic and freshwater ecosystems, and life below water. They will lead reflections on how our daily human activities are affecting each of the aforementioned sub-ecosystems.
 - Students will research and talk to the authorities in charge of regulating game and fishing laws, i.e. concerning the size or quantity that is permitted to fish depending on the species being caught. They will analyze the effectiveness of existing policies for preventing over-fishing and other practices that might deplete or harm life below water.
-

Resources/Organization:

- “Goal 14: Conserve and sustainably use the oceans, seas and marine resources” <http://www.un.org/sustainabledevelopment/oceans/>
 - “Conserve and sustainably use the oceans, seas, and marine resources for sustainable development” <https://www.one.org/us/globalgoals/life-below-water/>
-

STUDENT SELF-EVALUATION RUBRIC	
Student's Name:	Kindly provide brief answers below.
How was my appreciation toward life below water before the research?	
How has my perspective on life below water changed after this research?	
How can I contribute to keep freshwater and oceanic aquatic eco-systems healthy? How can I promote their sustainable usage?	
What are some things I wish to change about how my social circle manages life below water?	

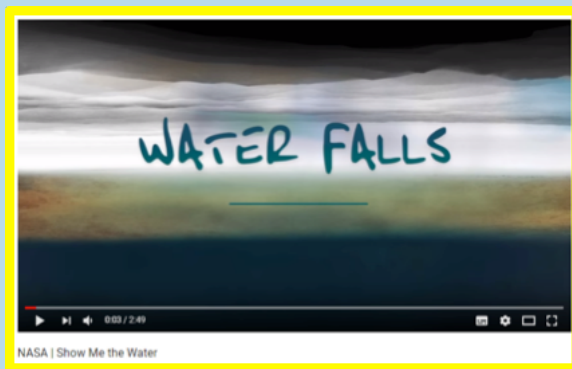
TEACHER TO STUDENT EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Student's awareness of life below water and the services it provides to human life					
Student's awareness of the impacts of humans on life below water					
The student is able to communicate the information above in his/her family and social circle					
Student's research shows understanding of the challenges and research findings suggest ways to improve the situation of life below water					
The student creates awareness for others on how they can help take care of life below water					
Student can contribute ideas about how to conserve and care for life below water in oceanic and fresh-water environments					

PEER EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Classmate evaluating:					
My classmate is able to communicate the importance of life below water among his/her social circle					
My classmate demonstrates awareness concerning life below water and how much humans depend on it					
My classmate has developed an idea of how to improve water quality and to reduce or eliminate human-caused damage to life below water					

Videos:

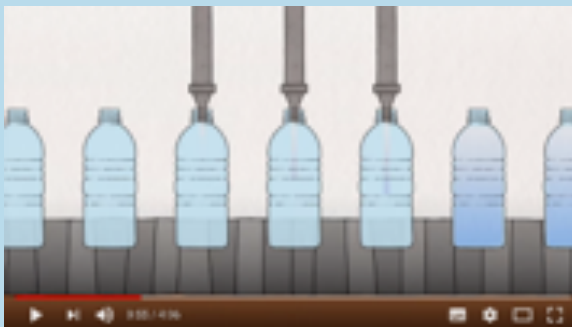


“How Much Plastic is in the Ocean?”



“NASA | Show Me the Water”

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“What really happens to the plastic you throw away - Emma Bryce”



“How Much Trash is in The Ocean?”



“Fresh water scarcity: An introduction to the problem - Christiana Z. Peppard”

Bibliography:

- Bryce, E. [TED-Ed]. (2015). What really happens to the plastic you throw away - Emma Bryce. [Video file]. Retrieved from https://www.youtube.com/watch?v=_6xlNyWPpB
- Hanson, J. [It's okay to be smart]. (2017). How Much Plastic is in the Ocean? [Video File]. Retrieved from <https://www.youtube.com/watch?v=YFZS3Vh4lfl>
- I. (2017, March 28). How Much Plastic is in the (MarcadorDePosición1)e Ocean? Retrieved October 19, 2017, from <https://www.youtube.com/watch?v=YFZS3Vh4lfl>
- NASA Goddard, (2014). Show me the water [Video file]. Retrieved from <https://www.youtube.com/watch?v=4HSFKwho7MQ>
- Peppard, C. [TED-Ed]. (2013). Fresh water scarcity: An introduction to the problem - Christiana Z. Peppard [Video file]. Retrieved from: <https://www.youtube.com/watch?v=otrpX-tAmDAk>

T. (2015, April 21). What really happens to the plastic you throw away - Emma Bryce. Retrieved October 19, 2017, from https://www.youtube.com/watch?v=_6xlNyWPpB

Seeker. (2014). How Much Trash Is In The Ocean? [Video File]. Retrieved from https://www.youtube.com/watch?annotation_id=annotation_585288167&feature=iv&src_vid=vWEAd4HLV-g&v=hfwmlps0Lco

Articles:



“What are the impacts of overfishing?”



“Impacts of overfishing on human lives”



“Conserve and sustainably use the oceans, seas, and marine resources for sustainable development”

Bibliography:

- ONE. (2015). Conserve and sustainably use the oceans, seas, and marine resources for sustainable development. Retrieved from <https://www.one.org/us/globalgoals/life-below-water/>
- Environmental Pollution Centers. (n.d.). What is water pollution. Retrieved from: <https://www.environmentalpollutioncenters.org/water/>
- eSchoolToday (n.d.). What are the impacts of overfishing. Retrieved from <http://www.eschooltoday.com/overfishing/impact-of-overfishing.html>
- Jetson, K. (2014). Impact of Overfishing On Human Lives. Retrieved from <http://marinesciencetoday.com/2014/04/09/impact-of-overfishing-on-human-lives/>

Images



Goal 14: Life below Water by Mauro Torselli

297



Individually we are one drop, together we're an ocean by Meurer



Bon Appétit by Christopher Godin

Bibliography images:

Godin, C. (n.d.). Bon Appétit [Digital Image]. Retrieved from <http://cdn.globalgoals.org/2015/09/Goal-14-V3-640x677.jpg>

Meurer, S. (n.d.). Individually we are one drop, together we're an ocean [Digital Image]. Retrieved from <http://cdn.globalgoals.org/2015/09/Goal-14-V21-640x452.jpg>

Toselli, M. (2016). Goal 14. Life Below Water [Digital Image]. Retrieved October 25, 2017, from <https://www.flickr.com/photos/xlontrax/28660260284/in/album-72157672078902171>.

15 LIFE ON LAND



<http://www.un.org/sustainabledevelopment/biodiversity/>

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Unit Author: Jesús López

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Sustainable Development Goal 15:

Life on Land

Summary of SDG 15's Content and Intent

The planet Earth is comprised of myriad land forms such as mountains, deserts, plains and plateaus. It is estimated that one-eighth of the Earth's surface is suitable for humans to live on. Half of that area is desert (14%), while high mountains and other rough terrains comprise an estimated 27% of the total land surface. The area under habitation is increasing through human encroachment in areas such as forests, riparian and coastal environments, and the razing of mountains and hillsides.

Land resources are being exploited at rates that render them unusable for cultivation and human habitation. Drought, floods, rising sea levels and desertification have resulted in the degradation and loss of land area and- concerning life on land- of the 8,300 known animal species, 8% are extinct and 22% are currently at risk of extinction.

This unit will inform and invoke action aimed at conserving and restoring terrestrial ecosystems such as forests, wetlands, dry lands and mountains. Halting deforestation is vital to mitigating the impact that climate change is having on terrestrial life. Urgent action must be taken to reduce the loss of natural habitats and biodiversity, which are part of our common planetary heritage. By the end of the unit, students will have acquired familiarity with sustainability issues related to land. Unit content is designed to stimulate conscious action toward safeguarding the future of the planet and all of its human and non-human inhabitants.

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What *awareness* should students have acquired by the end of this teaching unit?

Awareness of land ecosystems and their vital importance to sustaining life will be acquired. Concepts related to life on land and threats to its survival will be learned. The importance of soil, water and air for the survival of life on land will be emphasized. Knowing the consequences of water pollution will provide students with insights to think about solutions and immediate practices they can adopt and adapt for a safe and living Earth. Educating

the society, community and neighborhoods will contribute to the transfer and dissemination of skills related to sustainable practices with regard to conserving water.

What *values and attitudes* should students have developed by the end of this teaching unit?

By the end of this unit, students will have a general understanding of the concerns, consequences and constraints relating to life on land. The values of harmonious coexistence, co-habitation and respect for natural resources will be acquired through the lesson. Students will become motivated and they will identify their personal power to contribute toward safe and healthy land resources. Respect for plant, animal and human life will be instilled. The authors' are confident that this understanding will lead students to adopt values and attitudes that will orient their preference and decisions toward seeking technologies and adopting lifestyles that honor all forms of life on land.

What *skills* should students have developed by the end of this teaching unit?

Students will be equipped with skills of knowledge generation and dissemination, problem-solving, decision making, judgment formulation and undertaking projects toward preserving life on land. They will be prepared to suggest orientations and directions for reducing risks, minimizing threats and enhancing the potential of water as a natural resource that is necessary for sustaining life on land.

What *behaviors and lifestyle choices* should students have adopted by the end of this teaching unit?

Students will create awareness of the importance of land ecosystems and life on land by telling friends, family and community members about the effects of human activities on the planet's land ecosystems. They will develop ideas for solving ecosystem concerns within their social circle. Together with family members, friends and neighbors, students will strive to create awareness on how we can all commit to protecting the Earth's ecosystems. In addition to the awareness gained, it is hoped that the students as consumers will highlight and live by the best practices for utilization of land resources.

What possible *transformative actions* might be put forth to *students' families and communities* by the end of this teaching unit?

Students will be equipped with skills for knowledge generation, dissemination and awareness-building among the school, community, family and members of society. Green practices and technologies attempted elsewhere will help to inspire good practices and discourage harmful ones. Students will be equipped to offer solutions and to act against irresponsible land filling, quarrying, mining and other harmful practices. In addition, they will become practitioners and role models for safe and environmentally friendly solid waste management.

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 15

Theme/Topic:	Lesson Outcomes/Objectives:
Life on Land	<p>Students will:</p> <ol style="list-style-type: none"> 1. Acquire knowledge about the multiple ways in which land sustains human, plant and animal life 2. Learn about the degradation humans are causing to the land, and the consequences of continuing with our habitual behaviors 3. Apply their new knowledge in the community by planning and creating solutions to decelerate this problem, and to restore damaged lands 4. Acquire skills in awareness building and knowledge sharing among the community concerning the land-based problems faced, as well as the consequences of continuing with current human practices and behaviors 5. Analyze, discuss and propose options for moving toward full land restoration and sustainable usage

Activities/Tasks:
Warm up

- Students will create a mind map or list of multiple ways in which land sustains human, animal and plant life
 - Familiarize Students with SDG 15
 - Show video SDG 15- Life on land <https://www.youtube.com/watch?v=xEdNS3xBg38>
 - Students will become aware of the actual situation concerning unsustainable land usage and what effects current practices have on land-based ecosystems
 - Learning to protect biodiversity <https://www.youtube.com/watch?v=kHhspf5IfdE>
-

-Show video Why is biodiversity so important https://www.youtube.com/watch?v=GK_vRtHJZu4

- Research on local green areas, industrial parks, and home complexes
- Students will research to discover the level of pollution, degradation and unsustainable usage of the land ecosystem in their home community
- Students will study industrial parks and garbage disposal areas in their localities to determine if waste disposal practices are adequate and if ecological regulations are being followed properly
- In class, students will discuss the data they have collected and explain their research findings
- Students will propose ideas designed to lead to optimal land management
- Show video of “50 Years Ago, This Was a Waste Land. He Changed Everything” <https://www.youtube.com/watch?v=ZSPkcpGmfIE>
- In class, students will propose ideas for improving the state of Life on Land in the areas where they did their research
- Reflect on how we can improve or decelerate the detrimental effects that humans are having on land and the life forms found on land
- Students will make a mind map with their knowledge about life on land, and the many ways that the land sustains us
- Students will reflect on ways to help humans learn to interact sustainably with the land and all forms of life on land
- Students will propose ways to reconstruct and restore our planet in order to coexist sustainably with nature and all life forms
- Students will include ideas on how humanity can make the transition to sustainable lifestyles, and the sustainable usage of natural resources that the land offers to us

Teaching materials: (Readings, audio visuals, illustrations, photos, realia)

Videos:

- Conservation and the race to save biodiversity <https://www.youtube.com/watch?v=-u8x-i7KFHY4>
 - Learning to protect biodiversity <https://www.youtube.com/watch?v=kHhspf5IfdE>
 - “Human Activities that Threaten Biodiversity” <https://www.youtube.com/watch?v=2RC3Hsk90t8>
 - An Introduction to SDG 15 by GVI <https://www.youtube.com/watch?v=9Ac2VGihinA>
-

-
- “Land Degradation Neutral World” <https://www.youtube.com/watch?v=DPgtdEw5lgI>
 - Biomes | Biology | Ecology <https://www.youtube.com/watch?v=RFEV-hiP2Gq>
 - Act now and stop land pollution https://www.youtube.com/watch?v=ePPIy3L_cxA
 - Why is biodiversity so important? https://www.youtube.com/watch?v=GK_vRtHJZu4
 - Climate 101: Deforestation| National Geographic <https://www.youtube.com/watch?v=Ic-J6hcSKa8>
 - SDG 15- Life on Land <https://www.youtube.com/watch?v=xEdNS3xBg38>
 - “50 Years Ago, This Was a Waste Land. He Changed Everything” <https://www.youtube.com/watch?v=ZSPkcpGmfIE>

Illustrations:

- “Global Goals: Life on Land” <http://www.globalgoals.org/global-goals/life-on-land/>
- “Google Images” <https://cdn.artstation.com/p/assets/images/images/001/380/073/large/ericka-picar-tree.jpg?1445415513>
- “SDG 15: Life on Land” <http://in.one.un.org/page/sustainable-development-goals/sdg-15/>
- “Mauro Toselli. Goal 15. Life on Land” <https://www.flickr.com/.../in/album-72157672078902171/>

Key Questions:

- What is the importance of land for sustaining human and other forms of life?
- What sort of problems and challenges are humans causing to life on land?
- What contributions can I make to help solve these issues?
- How can I make people in my social circle aware of the destruction we are causing to our planet?
- How can I encourage my friends, family and community members to be a part of the solution to these problems?

Assessment: (Teacher, Peer, Self)

Evaluation rubrics are provided below

Activities student will apply in his/her personal life

Students will write a list or create a mind map about the impacts humans are causing on land and life forms on land. They will include observations about human-generated pollution and natural resource depletion. They will gain awareness of the causes and the negative effects humans have on nature. They will give ideas on how we can reverse the negative effects humans have on the land and land-based life forms.

Activities student will apply with his/her community

- Students will interact with family members, friends, classmates, and their community to create awareness of human-generated impacts on the land and land-based life forms
 - Students will invite members of their social circle to develop ideas for solving existing challenges to life on land
 - Students will organize family members, friends, and neighbors to develop activities oriented to protecting life on land
-

Readings & information sources:

- “Global Goal 15: Protecting life on land”

<https://www.globalcitizen.org/es/content/goal-15-protecting-life-on-land/>

- “Sustainable Development Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss”

<http://www.fao.org/sustainable-development-goals/goals/goal-15/en/>

- “Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss” <http://www.un.org/sustainabledevelopment/biodiversity/>

- “SDG 15 Indicators” <https://medium.com/sdgs-resources/sdg-15-indicators-9450fe6f9e35>
-

Subject skills utilized:

- Civic and Ethics
 - Administration
 - Geography
 - Biology
 - Social Studies
 - Natural Sciences
-

Partnerships for the goals: (How can we multiply this awareness and link it at the local, national and international levels? i.e. private sector, government, education, civil society, families)

- Create and disseminate social awareness of natural resources we use and the level of pollution we are causing
- Conduct student-led empirical research on the state of life on land and implement solutions to improve the places researched
- Discuss students' findings. Propose solutions and extend this knowledge to community, family and everyone in students' social circles
- Regulate the cutting of trees and implement reforestation measures to help revert the negative effects that humans have caused to the land

Resources/Organisation:

- World Wildlife Fund: WWF - Endangered Species Conservation
 - "Stand For Trees" <http://www.standfortrees.org/manvsearth>
-

STUDENT SELF-EVALUATION RUBRIC	
Student's Name:	Kindly provide brief answers to the questions below:
How did my perspective change after this unit concerning Life on Land?	
How was my appreciation toward life on land before conducting my research?	
How can I contribute to solving the many challenges concerning human land usage and the conservation of all forms of life on land?	
What are some things I would like to change about how my social circle is managing life on land? How can we as a community begin to implement these changes?	

TEACHER TO STUDENT EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Student's level of awareness of the ways that land sustains human life.					
Student detects problems and proposes solutions for facing existing challenges to life on land.					
Student creates awareness for others about how humans can take care of life on land.					
Student contributes ideas on how to take care of life on land without negatively affecting natural resources, the human community, and other land-based life forms.					

PEER-EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Classmate evaluating:					
My classmate demonstrates awareness concerning life on land and how much humans depend on it.					
My classmate understands the importance of life on land and is able to create awareness of the topic within his/her social circle.					
My classmate has developed ideas about how humans can help restore life on land and stop damaging it.					

Videos:



Conservation and the race to save biodiversity by California Academy of Sciences



"Human Activities that Threaten Biodiversity" by California Academy of Sciences

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"Learning to protect biodiversity" by UNESCO



“An introduction to SDG 15 by GVI”by GVI



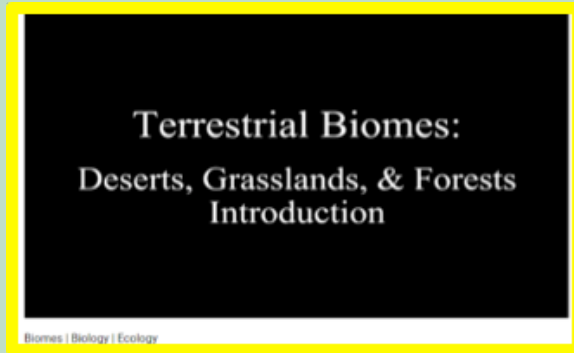
“50 Years Ago This Was a Waste Land” by National Geographic

Extra Videos



“Land Degradation Neutral World”by: UN-CCD

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Biomes | Biology | Ecology [https by great-pacificmedia](https://www.youtube.com/watch?v=great-pacificmedia)



“Act now to stop land pollution” by UN Environment



“Why is biodiversity so important? - Kim Preshoff” by TED-Ed



“Climate 101: Deforestation | National Geographic” by National Geographic



“SDG 15 Life on Land” by What Can You Do?

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- California Academy of Science. (2014). Conservation and the race to save biodiversity [Video file]. Retrieved from: <https://www.youtube.com/watch?v=-u8xi7KFHY4>
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- National Geographic. (2017). 50 Years Ago, This Was a Wasteland. He Changed Everything | Short Film Showcase [Video file]. Retrieved from <https://www.youtube.com/watch?v=ZSPkcpGmfIE>

UNESCO. (2012). Learning to protect biodiversity [Video file]. Retrieved from: <https://www.youtube.com/watch?v=kHhspf5IfdE>

Bibliography for extra videos:

greatpacificmedia. (2010). Biomes | Biology | Ecology [Video file]. Retrieved from <https://www.youtube.com/watch?v=RFEV-hiP2Gq>

Kim Preshoff [TED-Ed]. (2015). Why is biodiversity so important [Video file]. Retrieved from: https://www.youtube.com/watch?v=GK_vRtHJZu4

National Geographic. (2017). Climate 101: Deforestation | National Geographic [Video file]. Retrieved from: <https://www.youtube.com/watch?v=Ic-J6hcSKa8>

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UN Environment. (2017). Act now and stop land pollution [Video file]. Retrieved from:] https://www.youtube.com/watch?v=ePPIy3L_cxA

What can you do. (2017). SDG 15- Life on land [Video file]. Retrieved from <https://www.youtube.com/watch?v=xEdNS3xBg38>

Illustrations:

316



Life on Land - Goal 15 by Global Giving



Goal 15: Life and Land by Margreet De Heer



GOAL 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests combat desertification and halt and reverse land degradation and halt biodiversity loss by Mauro Toselli



Life on Land - Goal # 15 by Global Giving



Goal 15: Life on Land by THE GLOBAL GOALS

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Toselli, M. (2016). Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems sustainably manage forests combat desertification and halt and reverse land desertification halt biodiversity loss [Digital Image]. Retrieved from <https://www.flickr.com/photos/xlontrax/28660249804/in/album-72157672078902171/>

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16 PEACE, JUSTICE AND STRONG INSTITUTIONS



<http://www.un.org/sustainabledevelopment/peace-justice/>

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Unit Authors: Ramón Hernández, Yessica Vega and David Córdova

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Sustainable Development Goal 16: Peace, Justice and Strong Institutions

Summary of SDG 16's Content and Intent

Issues of peace and justice are urgent for our conflict ridden world, and the need for institutions designed to ensure peace, justice and wellbeing has become imminent. Systemic normalized violence has emerged as the most significant and destructive challenge to the survival of nation-States, the planet and mankind. Spurred by violent conflict, the world is continually facing the menace of mass migrations, which threatens the very foundations of stability and development. Crime as well as sexual and gender-based violence remain global challenges. Young people are especially vulnerable; 43% of all homicides globally involve youth between 10 and 29 years of age, and children continue to be innocent victims of human trafficking. The institutional violence of unaccountable judicial systems and depriving people of their human rights and fundamental freedoms all constitute forms of violence and injustice. In this unit students will develop an understanding of the structural causes of conflict. They will be familiarized with the processes involved in peace building, and through the activities offered in the unit they will acquire skills for building bridges of understanding in order to promote peaceful and inclusive societies for sustainable and dignified development.

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What *awareness* should students have acquired by the end of this teaching unit?

Students will develop a deep understanding of the main causes of institutional weakness and impunity around the world. Understanding of the concepts and the processes of peace and justice will be instilled, and students will acquire knowledge of the various institutions that support inclusive values in the community. Students will further be enabled to identify existing challenges to peace, justice and institutional efficiency that are detrimental to human and environmental justice. They will be equipped with skills that enable them to reflect and to put forward possible steps to overcome these challenges.

What *values and attitudes* should students have developed by the end of this teaching unit?

By the end of this unit students will have developed a general understanding of the concerns, constraints and significance with regard to peaceful co-existence for the survival of the human community and planet Earth. The values of harmonious coexistence and respect for fellow human beings and the planet will be imbibed throughout the lesson. Students will be able to identify their personal power to contribute toward a peaceful Earth, free from conflicts, with an emphasis on respect for human life. The authors are confident that this understanding will lead students to adopt values and attitudes that will orient their decisions toward working for peace and building a climate of understanding among the world's diverse communities.

What *skills* should students have developed by the end of this teaching unit?

Students will be equipped with skills for accepting criticism, accommodating difference, and negotiating to resolve conflicts and to identify solutions allowing groups to move forward in mutually-beneficial collaboration. They will further acquire the skills necessary for reflection and decision making, formulating judgements and undertaking peacebuilding initiatives. By the end of the unit, students will have developed capabilities to suggest orientations and directions for reducing risks, minimizing threats and promoting peace. They will be able to identify the attributes of strong institutions and to propose ways of strengthening peace and justice in their communities.

What *behaviors and lifestyle choices* should students have adopted by the end of this teaching unit?

Students will promote awareness of the importance of peace and justice by practicing peace and justice in the school. They will engage in peaceful activities and intervene to develop amicable solutions in the event of conflicts among schoolmates, family and community members. Together with family members, friends and neighbors, students will strive to create awareness on building communities of peace and working toward peace in their locality. Students will learn about the legal and institutional frameworks designed to ensure peace; they will analyze current events in light of institutional 'official lines,' and they will propose ways

to bring actual practice more into line with the narratives espoused in local, national and international institutions.

What possible *transformative actions* might be put forth to *students' families* and *communities* by the end of this teaching unit?

Students will be equipped to propose peace building initiatives; they will have received basic training in conflict transformation and negotiation to be applied among the school community, family and members of society. The study of peace building and conflict transformation will help to motivate and inspire good practices while simultaneously discouraging anti-social behaviors that might lead to conflict. By the end of the unit, students will be better equipped to offer solutions and to eliminate conflicts by taking the right action and corrective measures in their community.

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 16

Theme/Topic:

Peace, Justice and Strong Institutions

Lesson Outcomes/Objectives:

Students will:

1. Develop a deep understanding of the main causes of impunity in their local context
 2. Gain understanding of the importance of peace, justice and strong institutions
 3. Acquire familiarity with the various institutions that support peace and justice in their community and worldwide
 4. Identify existing challenges to peace, justice and institutional efficiency
 5. Propose ways to overcome these challenges in order to strengthen institutions designed to ensure peace and justice both locally and globally
-

Activities/Tasks:

1. The teacher will explain the concepts of ‘peace,’ ‘justice,’ ‘impunity,’ ‘violence’ and ‘discrimination’
 2. Teacher and students will discuss the global and local Institutions that are dedicated to ensuring peace and justice in the community. They will identify strengths and weaknesses in the Institutions, and in the peace and justice procurement processes
 3. Students will identify contexts a) where peace and justice are exercised constructively and, b) areas where peace and justice are weak or lacking in their community, their country and worldwide
 4. Students will analyze reasons for the weakness or the lack of peace and justice in the aforementioned situations
 5. Teacher and students will discuss which Institutions they can turn to in the event of problems concerning peace and justice. Students will locate these Institutions in their locality with the help of Google Maps
 6. Linking the local and the global, students will give their opinion about what is right and wrong in their community concerning peace and justice
-

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7. Students will compare and contrast different countries with regard to ‘impunity,’ ‘violence,’ ‘peace’ and ‘justice’
 8. Students will identify and present factors that determine disparity between the different countries
 9. Students will propose and present possible solutions to issues of weak or lack of peace and justice. They will propose ways to strengthen the Institutions in charge of ensuring peace and justice in their locality
-

Teaching materials: (Readings, audio visuals, illustrations, photos, realia)

Readings (articles), Audio visuals (news), Realia (what they see in the community)

- “The Sustainable Development Goals Explained: Peace, Justice and Strong Institutions”

<https://www.youtube.com/watch?v=5e0a7rpp1sw>

- SDG 16 Peace Justice and Strong Institutions Mary Grace Vella <https://www.youtube.com/watch?v=8BUjY482aN8>

- 2030- SDG 16- Peace, Justice and Strong Institutions- Ted Talks https://www.youtube.com/watch?v=6aqY-iY7s_Q

- “SDG16: Peace, Justice and Strong Institutions” <https://www.youtube.com/watch?v=xon-BEFWin74>

- “SDG 16 Peace” <https://www.youtube.com/watch?v=2zEdpbdoFSY>

Key Questions:

- What is justice? Please give examples of injustice
 - What cases of injustice do you see in your community?
 - Why do you think these injustices occur?
 - What do you do when something unfair happens to you?
 - Have you ever done something unfair? Please explain
 - What do you think about the police in your community?
 - Do you watch the news? What topics and issues are discussed in the news programs you watch?
 - What do you know about politicians and their relationship to peace, justice and the institutions designed to guarantee these values?
 - Who do you admire? Why?
 - If you have a Civics and Ethics class, what issues do you study that are related to peace and justice?
 - What countries did you research about?
-

-
- What did you find about them with regard to peace, justice and strong institutions?
 - How do you compare the cases that you have studied to your own community?
-

Assessment: (Teacher, Peer, Self)

- Participation in class
 - Quizzes
 - Presentation
 - Self-evaluation
 - Peer-evaluation
 - Teacher-evaluation
-

Activities student will apply in his/her personal life

- Have a group and personal reflection on ‘justice.’
 - Have a critical thinking session about unfair behavior which students have experienced from others. Identify communications strategies for appropriately pointing out the injustice to the perpetrator. Write a reflection on these.
 - Students reflect on their own behavior to become aware of their possible past and present unjust behaviors and attitudes. Formulate a plan to substitute their unjust behaviors and attitudes with more just alternatives. Write a reflection on these.
-

Activities student will apply with his/her community

- Chat with people about societal notions of ‘right’ and ‘wrong’. Ask people about what in the community supports peace and justice, and which aspects of community life run counter to basic peace and justice.
 - Discuss how to be proactive when something unethical is happening. Challenge it with appropriate words; offer peaceful and just alternative solutions to the issue at hand.
-

Readings & information sources:

- “Samuel: Helping keep the peace in Kenya” <https://www.one.org/international/blog/samuel-helping-keep-the-peace-in-kenya/>
 - “Justice and peace go hand in hand – you can’t have one without the other” <https://www.theguardian.com/global-development/2015/oct/26/justice-peace-conflict-affected-societies>
 - “SDG 16 – Promote Peace, Justice and Inclusive Societies” <http://www.mdgmonitor.org/sdg16-promote-peace-justice-and-inclusive-societies/>
 - “Goal 16: Peace, justice and strong institutions” <http://www.government.se/govern->
-

ment-policy/the-global-goals-and-the-2030-Agenda-for-sustainable-development/goal-16-peace-justice-and-strong-institutions/

- “Understanding Peace, Justice & Strong Institutions SDG16” <http://safecity.in/understanding-peace-justice-strong-institutions-sdg16/>

Subject skills utilized:

- Civics and Ethics
 - Social Studies
 - Geography
 - History
 - Oral Expression
 - Communicative Skills
 - Critical Thinking
 - Analytical Skills
-

Partnerships for the goals:

Children in the community discuss these issues with children in another part of the world via Skype or other social networks

Resources/Organisation:

- “Goal 16: Promote just, peaceful and inclusive societies” <http://www.un.org/sustainabledevelopment/peace-justice/>
- “Ensuring Sustainable Peace: Strengthening Global Security and Justice through the UN Peacebuilding Architecture” <https://cedricdeconing.net/2015/11/29/ensuring-sustainable-peace-strengthening-global-security-and-justice-through-the-un-peacebuilding-architecture/>

STUDENT SELF-EVALUATION RUBRIC	
Student's Name:	Kindly provide brief answers to the questions below:
What are the main causes of injustice?	
Briefly describe peace and justice.	
Briefly mention about a case that you witnessed of injustice.	
How can we promote peace and justice?	

TEACHER TO STUDENT EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
The student understands the concepts of peace and justice					
The student demonstrates knowledge of the importance of peace, justice and strong institutions					
The student is aware of the challenges that we face when seeking justice and peace					
The student is now able to propose solutions and strategies for peace and justice in his/her community					

PEER EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Classmate evaluating:					
My classmate shows an understanding of the concepts of peace, justice and strong institutions.					
My classmate shows an awareness of the importance of peace, justice and strong institutions.					
My classmate can explain the importance of justice in society.					
My classmate is now aware of the situations in which there is injustice.					

Videos



“The Sustainable Development Goals Explained: Peace, Justice and Strong Institutions” by United Nations (2015)



SDG 16 Peace Justice and Strong Institutions Mary Grace Vella by President’s Foundation for the Well Being of Society

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“2030- SDG 16- Peace, Justice and Strong Institutions- Ted Talks” by Let’s Change



“SDG16: Peace, Justice and Strong Institutions” by IOPD ODP (2016)



“SDG 16 Peace” by What Can You Do (2017)

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- IOPD ODP. (2016). SDG16: Peace, Justice and Strong Institutions [Video file]. Retrieved from <https://www.youtube.com/watch?v=xonBEFWin74>
- Lets Change. (2017). 2030- SDG 16- Peace, Justice and Strong Institutions- Ted talks [Video File]. Retrieved from https://www.youtube.com/watch?v=6aqY-iY7s_Q
- United Nations. (2015). The Sustainable Development Goals Explained: Peace, Justice and Strong Institutions [Video file]. Retrieved from <https://www.youtube.com/watch?v=5e0a7rpp1sw>
- Vella, M. [President’s Foundation for the Well Being of Society]. (2016). SDG 16 Peace Justice and Strong Institutions Mary Grace Vella [Video file]. Retrieved from <https://www.youtube.com/watch?v=8BUjY482aN8>
- What Can You Do. (2017). SDG 16 Peace [Video file]. Retrieved from <https://www.youtube.com/watch?v=2zEdpbdoFSY>

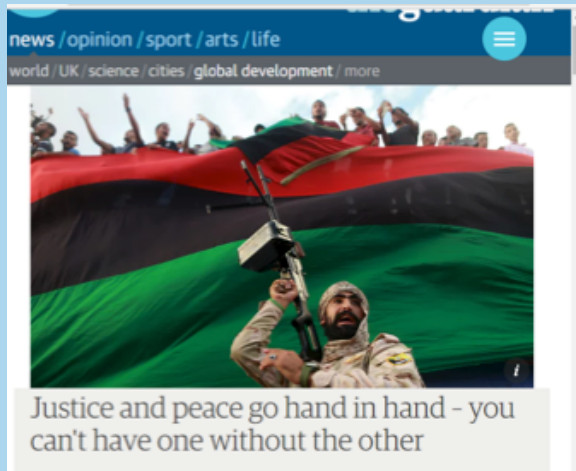
Articles



“Understanding Peace, Justice & Strong Institutions SDG16” by Safecity (2016)



“Samuel: Helping keep the peace in Kenya” by One (2015)



“Justice and peace go hand in hand – you can’t have one without the other” by The Guardian (2015)



SDG 16 – Promote Peace, Justice and Inclusive Societies” by MDG Monitor (2016)



“Goal 16: Peace, justice and strong institutions” by Government Offices of Sweden (2015)

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- Guy-Allen, C. (2015). Samuel: Helping keep the peace in Kenya. Retrieved from <https://www.one.org/international/blog/samuel-helping-keep-the-peace-in-kenya/>
- Bennett, W., and Wheeler, T. (2015). Justice and peace go hand in hand – can’t have one without the other. Retrieved from <https://www.theguardian.com/global-development/2015/oct/26/justice-peace-conflict-affected-societies>
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- Government Offices of Sweden. (2015). Goal 16: Peace, justice and strong institutions. Retrieved from <http://www.government.se/government-policy/the-global-goals-and-the-2030-Agenda-for-sustainable-development/goal-16-peace-justice-and-strong-institutions/>

Illustrations



16 Peace, Justice and Strong Institutions by The Global Goals (2017)



17 Days, 17 Goals: Progress made on the Sustainable Development Goals by United Nations (2017)



SDG 16: If you want peace, work for justice
by Ekantipur (2017)



Advocate Peace and Stability with #SDG16
by United Nations in India (2017)

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SDG 16: Peace, Justice and Strong Institutions
by United Nations in India (2017)

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- Derek. (2016). Advocate Peace and Stability with #SDG16 – [GSC 17/17, week 16] [Digital image]. Retrieved from <https://www.gscouncil.org/advocate-peace-and-stability-with-sdg16-gsc-1717-week-16/>
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- The Global Goals. (n.d.). 16 Peace, Justice and Strong Institutions [Digital Image]. Retrieved from <http://www.globalgoals.org/global-goals/peace-and-justice/>
- Sustainable Development Goals. (2016). #17days17goals: Progress Made on the Sustainable Development Goals [Digital Image]. Retrieved from <http://www.un.org/sustainabledevelopment/blog/2016/07/17goals17days-progress-made-on-sustainable-development-goals/>
- United Nations in India. (n.d.). SDG 16: Peace, Justice and Strong Institutions [Digital Image]. Retrieved from <http://in.one.un.org/page/sustainable-development-goals/sdg-16/>

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17 PARTNERSHIPS FOR THE GOALS



<http://www.un.org/sustainabledevelopment/globalpartnerships>

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Unit Authors: David Córdova and Yessica Vega

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Sustainable Development Goal 17: Partnerships for the Goals

Summary of SDG 17's Content and Intent

SDG 17 aims to strengthen the implementation of development initiatives and revitalize global and local partnerships for sustainable development. It underscores the need to forge g/local linkages through a strong commitment to partnerships and collaborative action. Developments in technology have made geographic boundaries less impenetrable, and they allow us to forge linkages with like-minded individuals and organizations around the world as we work to achieve sustainable development. It is vital to coordinate policies to help countries manage their debt, and to promote investment that will allow the least developed to achieve sustainable growth and development. Partnerships are built upon principles, values, a shared vision and shared goals that place people and the planet at the centre. These common values must be espoused at the global, regional, national and local levels in order to achieve sustainable development and dignity for all. Areas of particular relevance include sustainable energy, infrastructure and transport, as well as information and communications technologies.

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What *values and attitudes* should students have developed by the end of this teaching unit?

By the end of this unit, students will have a general understanding of the necessity of building partnerships with like-minded people around the globe. The values of knowledge-sharing, working as a team, collaboration and communication will be instilled through the content and activities offered below. Students will realize the need to share and to learn from the experiences of others. The importance of fostering development through mutual cooperation and support will be cultivated through the myriad activities and reflections offered in the unit.

What *skills* should students have developed by the end of this teaching unit?

Students will be equipped with skills that enable collaboration, communication and negotiation designed to foster linkages and build lasting relationships with others who strive for sustainable development. They will have developed capabilities to build social networks and to work in teams toward shared goals. Students will acquire the abilities required for knowledge sharing and information transfer. They will gain skills in persuasive argumentation in order to articulate their opinions in ways that motivate and advance the collective consciousness toward sustainable development and dignity for all people and the planet.

What *behaviors and lifestyle choices* should students have adopted by the end of this teaching unit?

Students will create awareness among others on the importance of forging linkages, and building sustainable social and economic relationships. They will learn to appreciate the best practices of others and make individual attempts to follow and to become leaders who champion sustainable practices in their community. They will engage in developmental activities which involve partnerships and collaboration with other segments of society, members of the community, social organizations and economic institutions at the global and local levels.

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What possible *transformative actions* might be put forth to *students' families and communities* by the end of this teaching unit?

By the end of this unit, students will emerge as meaningful partners and as leaders for sustainable development both locally and globally. They will encourage and motivate members of their family, community and society to work collectively to realize the goals of sustainable development as expressed through the UN SDGs.

LESSON PLANS, ACTIVITIES AND MATERIALS

SDG 17

Theme/Topic:

Partnerships for the Goals

Lesson Outcomes/Objectives:

Students will learn:

1. What kinds of institutions can help countries develop and how these institutions function.
2. About the impacts of technology on countries and how technological innovation has changed and affected developing communities.
3. About the implementation of different capacity building activities designed to support all of the goals.
4. The pros and cons of the international trade and commerce system that both pushes and binds developing countries.

Activities/Tasks:

1. Finance

1.1 Students will read “Development” They will make a drawing that illustrates what a developing country ‘looks like’ according to their understanding

1.2 Students will understand the role played by the International Monetary Fund (IMF) and how it can help and possibly hurt developing countries (Video “Capacity Development”)

1.3 Using as an example the IMF techniques, students will create an association designed to help their country have better management of their finance

2. Technologies

2.1 Students will reflect and brainstorm with the teacher about how technology affects or changes the lives of individuals, communities and countries

2.2 Students will brainstorm about the impact of technologies and internet access in developing countries

2.3 Students will go out and observe access to technology, or the lack thereof, in their community that would help them be economically competitive

2.4 They will make posters about the importance and the impacts of technology on developing communities and countries

3. Capacity building

3.1 Students will become acquainted with the international support available for capacity-building trainings in developing countries. They will be familiarized with support systems available for regional implementation of all the UN Sustainable Development Goals

4. Trade

4.1 Students will watch the video “Is the European Union worth it or should we end it?” (Listed below). They will create a mind map that illustrates the pros and cons of economic union among countries

4.2 Students will read “World Trade Organization- WTO.” They will write a composition which summarizes what is the WTO

4.3 As a final activity, students will be divided into small groups. Each team will represent a country as designated prior to beginning the activity. Depending on the type of country they are, each team will be given symbols of resources to make some type of food or dish and a certain amount of symbolic currency

4.4 Each team will set a price for their own resources, which they will either sell or use to make their own dishes. The teams that are developing countries will want to negotiate for more resources and affordable prices according to the value of their own currency, while the developed countries may grant or deny the negotiations proposed by the developing nations

4.5 One team will act as a mediator and other teams might resort to them in order to negotiate successfully with other teams

The goal of this activity is to be able to make the most dishes possible

Possible outcomes:

- Developed countries help developing countries and every team makes many dishes
- Developed countries deny developing countries help and they end up with more dishes
- The teacher should explain after the activity that cooperation would have provided the best results

5. Systematic issues

5.1 Students will get acquainted with development policy and its institutional coherence through a series of presentations. They will learn about multi-stakeholder partnerships and the ways to collect development-related data, to ensure accountability and to monitor policy implementation outcomes

Teaching materials: (Readings, audio visuals, illustrations, photos, realia)

- “Development” <https://www.nationalgeographic.org/encyclopedia/development/>
- “Is the European Union worth it or should we end it?” <https://www.youtube.com/watch?v=XxutY7ss1v4&t=2s>
- “Capacity Development” <http://www.imf.org/external/np/ins/english/index.htm>
- “Sustainable Development Goals Explained: Partnerships for the Goals” <https://www.youtube.com/watch?v=Ta8PIPxDR4U>
- “How Public-Private Partnerships Can Help Achieve the SDGs” <https://www.youtube.com/watch?v=g9p3t275eCA>
- SDG 17 Partnership for the Goals Marie Briguglio <https://www.youtube.com/watch?v=-to-CPX18oT0>
- “SDG 17- Partnerships for the Goals- Ted Talks” <https://www.youtube.com/watch?v=eUhc2S5FIL8>

Key Questions:

- What is the purpose and the mission of the International Monetary Fund?
- What is a developing country?
- How has technology changed or affected communities?
- What is the World Trade Organization and what is its mission?
- What are the main issues that must be faced in order to strengthen partnerships for the Sustainable Development Goals?

Assessment: (Teacher, Peer, Self)

- Students will be evaluated through a written or oral quiz in which they have to demonstrate that they learned and understood what Partnership for the Goals really means and how they can be achieved
- They will work in teams to meet the established goals by developing and sustaining mutually-beneficial partnerships

Activities the student will apply in his/her personal life

Students will reflect on how to hone their skills in order to become more efficient at reaching solutions to shared problems in collaboration with a variety of partners and stakeholders

Activities student will apply with his/her community.

Students will share what they've learned with peers, relatives and community members. They will seek to improve their partnership skills as well. They will try to improve how they communicate with others in order to become a hardworking society in which everybody participates to make the world a better place.

Readings & information sources:

- Goal 17: Partnerships for the goals <http://www.sdgfund.org/goal-17-partnerships-goals>
 - SDG 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development <http://www.unwomen.org/en/news/in-focus/women-and-the-sdgs/sdg-17-partnerships-for-the-goals>
 - Sustainable Development Goal 17: Strengthen the Global Partnership <https://www.greenbiz.com/article/sustainable-development-goal-17-strengthen-global-partnership-sustainable-development>
 - Sustainable Development Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development <http://www.fao.org/sustainable-development-goals/goals/goal-17/en/>
-

Subject skills utilized:

- Sociology
 - Humanities
 - Social Studies
 - Technology
 - Civics
-

Partnerships for the goals: (How can we multiply this and link it at the local, national and international levels? i.e. private sector, government, education, civil society, families)

- Give leaflets to people with information about the SDGs and about associations they can contact in order to become active in working to achieve the goals
 - Create local public events focusing on Partnership for the Goals
 - Publish information in and around communities about how to improve partnerships to reach each one of the different goals
-

Resources/Organisation:

Sustainable Development Knowledge Platform <https://sustainabledevelopment.un.org/sdg17>

SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development <https://sdgcompass.org/sdgs/sdg-17/>

Goal 17: Revitalize the global partnership for sustainable development <http://www.un.org/sustainabledevelopment/globalpartnerships/>

STUDENT SELF-EVALUATION RUBRIC

Student's Name:

Kindly provide a brief answer to each question below:

How is the Partnership for the Goals perceived in my community?

What is the importance of developing multiple partnerships for the goals?

What are the main ways to develop efficient partnerships and collaborative activities for the goals?

What are the ways in which I can strengthen the partnership for the goals? Name and explain them

TEACHER TO STUDENT EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
The student understands the factors required to ensure partnerships for all the goals					
The student demonstrates knowledge of the importance of partnerships for achieving goals for the society					
The student is aware of the challenges of a partnership for the goals, both globally and in his/her community					

PEER EVALUATION RUBRIC					
Student's name:	Poor 1	Fair 2	Average 3	Good 4	Excellent 5
Classmate evaluating:					
My classmate shows an awareness of the factors involved in developing partnerships for the goals					
My classmate understands the importance of developing partnerships for the goals for society					
My classmate can propose ways to develop and strengthen partnerships for all the goals, for all people in all places at all times					

Videos



“Capacity Development”



“Sustainable Development Goals Explained: Partnerships for the Goals” (2015)

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How public-private partnerships can help achieve the SDGs” (2015)



Is the European Union worth it or should we end it?



“SDG 17-Partnership for the Goals- Ted Talks” (2017)

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Prof. Dr. Carolina López C. is the Founder of Living Lab/Centro de Diálogo y Transformación Inc., Centre for Dialogue & Human Wellbeing, Regional Centre of Expertise Borderlands México-USA and Regional Centre of Expertise Central Semenanjung- Malaysia; the latter two centres are acknowledged at the expert level by United Nations University-Institute for the Advanced Study of Sustainability. Prof. López currently has 88 publications-- some of which are scientific, academic or theological, and others which are published through the popular press. She works as Professor-Researcher at the Autonomous University of Chihuahua in North Central México.

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Andrea Rivera Hernández was born in Chihuahua, Chihuahua México. She is 23 years old and a senior student from the B.A. in English Language program at the Autonomous University of Chihuahua. She is already working as a teacher in a public elementary school with children between 6 and 10 years old. She loves teaching and being in contact with students in their different needs concerning school matters. Her work in this book is based on activities that are easy to understand for the target audience-- children around the world who are interested in how they can work to improve their communities concerning development-related problems that are present around the planet.

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Luis Edwin Gómez Portillo was born in Chihuahua, Chihuahua México on July 9, 1990. As an only child, he grew up in a small town called Valle de Zaragoza, where he studied Livestock Husbandry at the Secondary School. In CONALEP High School, Edwin became specialized as an Electromechanical Technician. At the University level, Mr. Gómez studied Software Engineering for three years at the Autonomous University of Chihuahua. He is currently finishing a Bachelor's Degree in English Language with a focus on translation and film dubbing. Mr. Gómez expects to graduate from the University in the first semester of 2019.

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Yessica Vega is a twenty-one year old student of the English Language major at the Autonomous University of Chihuahua. She plans to graduate by the end of 2018. Prior to entering the University, Yessica studied at a well-known high school where she spent three years before choosing to enter the English Language program. Yessica truly enjoys translating and teaching, and she hopes to teach English to other people in the future. She is grateful for the opportunity that Prof. Dr. Carolina López C. gave her to work with the project team in the creation of this book.

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The *United Nations Sustainable Development Goals Teachers' Resource Book* has been written over the course of one year by English Language Majors enrolled in the 'Programs and Design in Education for Sustainable Development' course (*Programa y Diseño en Educación para el Desarrollo Sustentable*) taught by Prof. Dr. Carolina López C. at the Autonomous University of Chihuahua in North Central México. Collaborating Organizations include Living Lab/Centro de Diálogo y Transformación Inc. and Regional Centre of Expertise on Education for Sustainable Development: Borderlands México-USA.

The *Resource Book* constitutes a sincere effort to bring Education for Sustainable Development materials to the borderlands region in order to offer awareness, knowledge, values, skills and attitudes that will become behaviors, lifestyles and commitments designed to help usher in an era of sustainable development for the human community and the planet.

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