1 INTRODUCTION TO SUSTAINABILITY

TEACHER'S NOTES

GRADE: 7 – 9

SUBJECTS: GLOBALISATION
GEOGRAPHY
CHEMISTRY

TEACHING OBJECTIVES

- Define sustainability and its three key components: the economy, the environment, and society (People, Planet & Profit)
- Planet: Learn about "global warming" and "carbon footprint"
- Profit: Understand how our economic system works and why the system supports businesses to care more about profit and growth than the environment.
- People: Discover the historical evolution of workers' rights from the industrial revolutionto the present.

OVERVIEW OF THE MODULE:

Time guidelines are estimated. Please feel free to organise the class as you consider more convenient.
Happy teaching!

VIDEO INTRODUCTION TO SUSTAINABILITY. 5 MIN

Wether you want to teach all sections on this module together or just one of them, we highly encourange teachers to start with this powerful video introduction.

1.1 PLANET — 2x45 MIN

This unit will define natural resources and global warming from a geological, and biological perspective. It will also explain what carbon footprint means.

- Sustainability
- Natural Science

1.2 PROFIT — 2x45 MIN

This unit will outline shortly how our economic system works and why the system supports businesses to care more about profit and growth than the environ-ment. It will conclude explaining how a sustaina-ble business might look like.

- Sustainability
- Entrepreneurship

1.3 PEOPLE — 2x45 MIN

This unit will dive more specifically into the fashion industry. It will describe the historical evolution of workers' rights from the industrial revolution to the present

- Sustainability
- Social Science

1 INTRODUCTION TO SUSTAINABILITY

1.1 PLANET

TEACHER'S NOTES

2x45 MIN

SECTIONS IN THIS MODULE:

THEORY – A. WHAT ON EARTH IS SUSTAINABILITY?

5 MIN

This section is an introduction to the concept of sustainability. It also introduces the 3P's definition: People, Profit and Planet.

VIDEO

5 MIN

Here we introduce Nelson. Nelson is a teenager going through his own discovery of sustainable and unsustainable things in his life.

5 MIN

In this video he will talk briefly about all products being made of natural resources and how inportant is to find a way of extracting natural resorces sustainably.

DISCUSSION

5 MIN

You have just seen in the animation that basically everything around is made of natural resources. So you can start the discussion by asking students a few questions to get curious about what kind of natural resources go into the making of things around us like:

Chair **Jumper** **Pencil** **Phone**

Find a guide to what phones are made of at the end of the lesson. And hopefully you can find other things are made. feel free to add other things to this list if you need them.

CONCEPT CHECK 1

5 MIN

To make sure students are keeping up with the vocabulary on this section print a copy of the concept check you are going to find on the last page of the teacher's notes. Results are shown here:

Resources	The natural home or environment of a living organism.
To exhaust	All the people born and living at about the same time.
Habitat	The things we use to support ourselves, like water and food.
Sustainable	To use so much of something that there is nothing left.
Generation	Use of resources that leaves enough to future generations.

RESEARCH TASK

10 MIN

Divide your class in couples or groups and assign one of these tasks to each group. After 5 min ask each group to present their findings.

TASK 1 - How much has the world population grown since 2000?
TASK 2 - How many species of animals are currently at risk of extinction?
TASK 3 - Which industries are the most polluting and in what ways?
TASK 4 - What are the United Nations' Sustainable Development Goals?
TASK 5 - What is 'food security' and 'water security'?

THEORY – B. WHAT IS GLOBAL WARMING?

10 MIN

In this section you can find an explanation of global warming and a definition of green house gases (GHG). If you want to build up your knowlenge on this topic, you have a few links to some interesting material:

Wikipedia definition of Global Warming:
https://en.wikipedia.org/wiki/Global_warming

VIDEO

5 MIN

This is a video from National Geographic explaining a little bit more in depth what they just read in the theory module. Students can put their knowledge into a more global context and this will help them understand better the thoery.

National Geographic 3 min video on Global Warming:
https://www.youtube.com/watch?v=oJAbATJCugs

CONCEPT CHECK 2

5 MIN

To make sure students are keeping up with the vocabulary on this section print a copy of the concept check you have on the last page of the teacher's notes. Results are here shown here:

Absorb	The amount of a substance in one space.
Atmosphere	A natural fuel formed in the past from living organisms.
Concentration	Invisible radiant energy emitted by the sun and heated objects.
Greenhouse gas	The layer of gases surrounding a planet.
Fossil fuel	Take in or soak up by physical or chemical action.
Infrarred radiation	Gases that absorb infrared radiation.

PRE-READING QUESTIONS

10 MIN

Here are some questions you could ask your students. Ask them out loud if you want to start a discussion, or ask them to write their answers in a paper and ask a few of them to read them out loud afterwards.

1. What kind of activities result in the emission of greenhouse gases?
2. Why are we producing more GHG emissions than ever before?
3. How can we know how polluting things are?

THEORY – C. WHAT KIND OF ACTIVITIES RESULT IN THE EMISSION OF GREENHOUSE GASES?

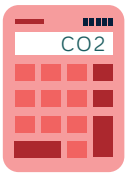
5 MIN

This section will teach students what a carbon footprint is and that everybody has one. Including each one of them.

ACTIVITY – WWF CARBON FOOTPRINT CALCULATOR

15 MIN

This activity will take students to the carbon footprint tool that WWF has designed. They will have to answer very easy questions and at the end of the questionnaire, WWF will tell them what is their carbon footprint and some easy tips to reduce it. You can guide them through the tips that the website offers and have an interesting discussion. Students can suggest their own ideas to reduce their carbon footprint.

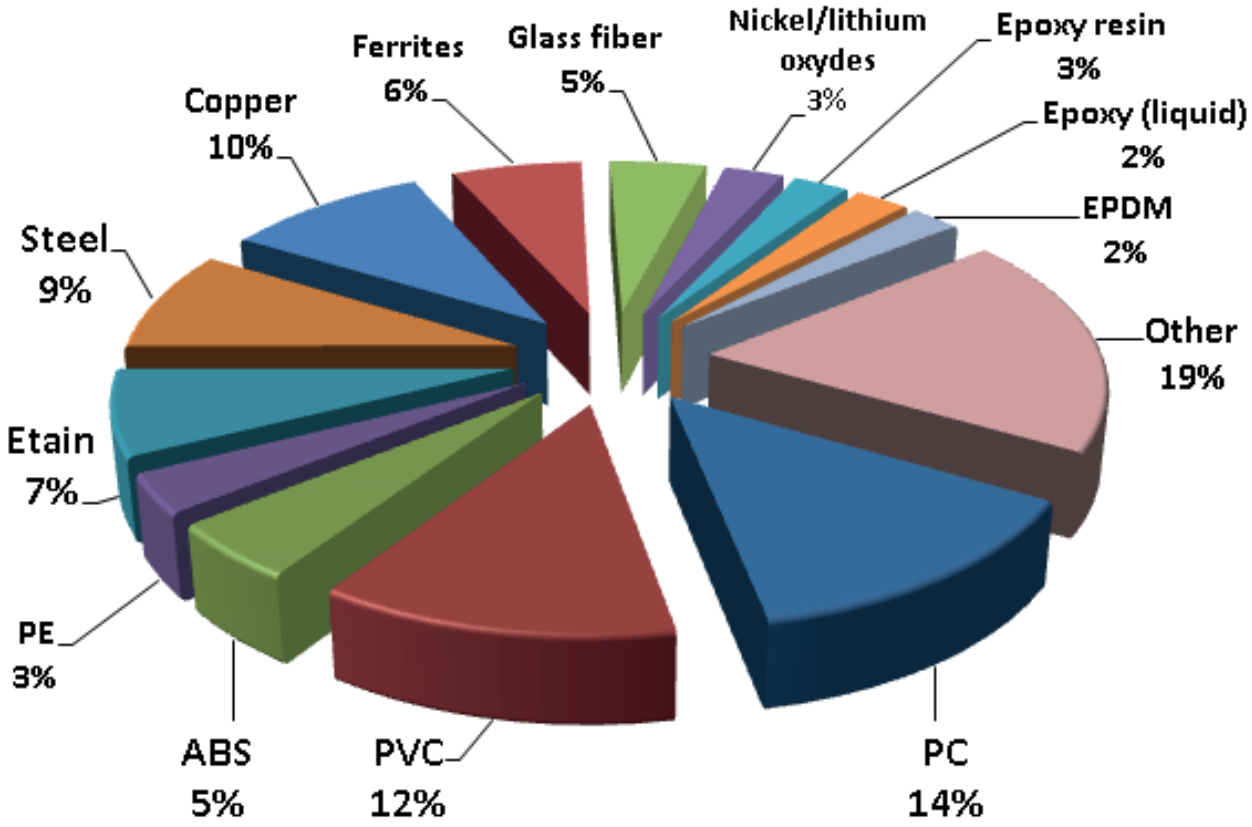


HTTP://FOOTPRINT.WWF.ORG.UK/

HOMEWORK (OPTIONAL) – CARBON FOOTPRINT™ CALCULATOR

The CARBON FOOTPRINT™ calculator is more complex than the WWF calculator and it will require the help of parents. The tool guides you through all the sources of GHG and helps calculate the carbon footprint of the entire household. This is a good excercise to share the awareness of global warming with the parents. This way it will be easier for students to start applying the tips to reuce their carbon footprint learnt in school.

HTTP://WWW.CARBONFOOTPRINT.COM/CALCULATOR.ASPX



The composition of a phone

SECTIONS IN THIS MODULE:

THEORY – A. CAPITALIST SYSTEM

5 MIN

This module explains the concepts of free market, consumerism and constant growth.

**Imagine you want to buy a new pair of jeans.
What kind of processes do you think there are in the making of a pair of jeans?**

Guide the discussion with the Graphic 1 "THE STAGES OF A PAIR OF JEANS" attached at the end of this teaching notes.

CONCEPT CHECK 1

5 MIN

To make sure students are keeping up with the vocabulary on this section print a copy of the concept check you can find at the end of the teacher's notes. Results are shown here:

profit	An economic (and usually) political system in which a country's trade and industry are controlled mostly by private owners / shareholders for profit, rather than by the state.
invest	A place where things are bought or sold.
shares	Promoting and selling products and services, including research about what products consumers want and advertising those products.
market	A person who buys goods or service.
capitalism	In business, to spend money on something in the hope of making a profit. This can be short-term profit or a longer-term goal, like a better image for your company.
marketing	A division of a company's capital that entitles the buyer to a proportion of the company's profit.
capital	A financial gain, including the difference between the amount a company pays to produce something and the amount they earn from selling it.
consumers	Money available to a company for purposes such as investing in new technology, building new factories and shops, developing and advertising new products, paying high salaries to managers, etc.

VIDEO – THE STORY OF STUFF

5 MIN

This is a video from National Geographic explaining a little bit more in depth what students just read in the theory module. Students can put their knowledge into a more global context and this will help them understand better the theory.

**National Geographic 3 min video on Global Warming:
http://video.nationalgeographic.com/video/101-videos/global-warming-101**

COMPREHENSION QUESTIONS – THE STORY OF STUFF

5 MIN

Here are some questions you could ask your students. Ask them out loud if you want to start a discussion, or ask them to write their answers on paper and get a few of them to read their answers out loud afterwards.

1. What are the 'three Ps' that a sustainable business should take care of?
2. What is a 'sustainable source'?
3. What are some of the ways that companies could be socially responsible?
4. In what ways do companies based in developed countries benefit from the tax people pay in those countries?

THEORY – B. HOW A SUSTAINABLE BUSINESS LOOKS LIKE

5 MIN

A brief explanation on what sustainable businesses should care about.

RESEARCH TASK

10 MIN

Divide your class in 5 groups and assign one of these tasks to each group. After 5 min ask each group to present their findings. Please make this activity longer if you feel it is needed.

TASK 1 - Find three examples of sustainable sources.
TASK 2 - Find the names of four famous companies that have been in the news for not paying taxes.
TASK 3 - Find out what 'CSR' stands for and what it means.
TASK 4 - Find out what 'tax evasion' means.
TASK 5 - Find out what the 'triple bottom line' means.

QUIZ TIME!

10 MIN

Divide your class in 5 groups and assign one of these tasks to each group. After 5 min ask each group to present their findings.

2x45 MIN

SECTIONS IN THIS MODULE:

THEORY – A. WORKING CONDITIONS AT THE TIME OF INDUSTRIAL REVOLUTION — 10 MIN

This unit explains how the Industrial Revolution changed the lifestyle of a big part of the population. It also explains how the production of garments became the pillar of the current fashion industry.

VIDEO – TRIANGLE SHIRT WASTE FACTORY — 5 MIN

This video will add some audiovisual perspective to the reality of factory workers in western countries in the beginning of the 20th century. With this, students will understand that, before everything was produced in South East Asia, we produced everything in our own countries.

National Geographic 3 min video on Global Warming:
http://video.nationalgeographic.com/video/101-videos/global-warming-101

RESEARCH TASK — 10 MIN

Divide your class in 5 groups and assign one of these tasks to each group. After 5 min ask each group to present their findings. Please feel free to make this exercise longer if needed.
If you need a link to guide your students for information check this link:
http://webs.bcp.org/sites/vcleary/ModernWorldHistoryTextbook/IndustrialRevolution/IREffects.html101

TASK 1 - Find out when people got the vote in different countries in Europe.
TASK 2 - Find out who the Luddites were.
TASK 3 - Find out what the Combination Acts were.
TASK 4 - Find out when the first unions were formed.

THEORY –B. THE FASHION INDUSTRY MOVES EAST — 10 MIN

This unit explains how and why fashion brands started outsourcing production and how we ended up wearing clothes “Made in China”.

COMPREHENSION QUESTIONS — 5 MIN

Here are some questions you could ask your students. Ask them out loud if you want to start a discussion, or ask them to write their answers on paper and ask a few of them to read them out loud afterwards.

1. Why did textile companies experience a reduction in profits? (150 words)
2 Why did western textile companies move to developing countries? (150 words)

THEORY – C. THE FASHION INDUSTRY TODAY

10 MIN

This module sums up all the changes we have read about before and explains how the fashion industry became the industry we know today.

RESEARCH TASK

20 MIN

Divide your class in 5 groups and assign one of these tasks to each group. After 10 min ask each group to present their findings.

TASK - Find 2 sustainable fashion brands (footwear, denim, wool, sportwear, luxury, casual, accesories)

There are many ways of being sustainable:

- **Are they fairtrade?**
- **Do they use sustainable materials (recycled, closed-loop, organic)?**
- **Are they locally made? For example, if it's a Danish brand, is it made in Scandinavia?**

Make a 3min presentation with all brands you found for your classmates.

PRINT THIS PAGE AND GIVE ONE COPY TO EACH STUDENT

PRINTING MATERIAL

1.1 PLANET – CONCEPT CHECK 1

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consumers	Money available to a company for purposes such as investing in new technology, building new factories and shops, developing and advertising new products,

GRAPHIC 1 – STAGES OF A PAIR OF JEANS

EXTRA MATERIAL FOR TEACHERS

1. WHAT IS IT MADE OF?

ENVIRONMENT - Natural fibers are grown with fertilisers and pesticides, and uses a lot of water to be grown.
SOCIAL - Another thing to consider is the working conditions of the countries where the natural fiber is grown. Are they getting fairly paid? Do they have child labour working in the fields?

Interesting facts

Did you know that to grow the cotton that goes into a t-shirt you need 2700 litres of water[1]? That is the water you need to shower for 2 months[2].
2 MONTHS!!

2. PROCESSING MATERIALS

ENVIRONMENT - Cleaning and dying the fibres use harsh chemicals to give fabrics the colour and nice texture you can see on your jeans. This also means you need tons of water to rinse all these chemicals from the fabric before you can wear it.
SOCIAL - What about the conditions of these factory workers? Are they properly protected against all the chemicals they use every day? Do they get paid enough?

3. MANUFACTURING

ENVIRONMENT - Most factories in developing countries run in old equipment, wasting a lot of energy. Also, the waste is dumped inadequetly so it ends up in landfill instead of being reuse or recycle.
SOCIAL - Garment factory workers are among the lowest paid workforce in the world. Certain countries have better working conditions than others.
Where were your jeans made? Do they have good working conditions there?

Find out here
http://labourbehindthelabel.net/campaigns/living-wage/

4. DISTRIBUTION

Where are your jeans travelling from?
Boat transportation is normally less polluting than air tranportation. Trucks are also a common way of trasporting garments from the ports to the distribution centres and from there to stores.
Is the brand producing your jeans doing anything to use less polluting ways of transporting their garments?

5. PACKAGING

ENVIRONMENT - Check how many things come with your jeans when you buy them. A box? A cardboard label? 2? 3? A bag to carry it? A plastic bag to protect it when they ship it? A hanger?
Are there any of these things recyclable?

6. WASH, WEAR and WARDROBE

ENVIRONMENT - What happens after you buy your clothes?
Clothes are washed over and over again. This process uses a lot of energy and detergents that are also chemical.
How could you do this in a more sustainable way?

Interesting facts

Do you know that around 20% of the total energy used in the lifecycle of a t-shirt comes from washing it after you use it[3]?

7. LANDFILL, REUSE or RECYCLE

ENVIRONMENT - What happens to your jeans when you don't want them anymore? Do you throw it to the bin? Do you take it to a textile collection point?
Do you give it to charity so they can re-sell it?

[1] http://www.worldwildlife.org/stories/the-impact-of-a-cotton-t-shirt
[2] http://everylittledrop.com.au/knowledge-center/how-much-water-does-a-person-need/
[3] http://bit.ly/23RuGo8