Middle School Learning Support: ASDAN Curriculum Programmes

(Submitted by Grisell Bravo Gonzalez, 2017, while serving as Learning Support teacher at International School of Havana, Cuba)

Tool(s) used:	• Sustainability Compass
Purpose of using tool:	• Research • Generating Questions • Guiding Discussion **Overview:** Using Sustainability Compass I provide my ASDAN students with opportunities to develop their understanding of what a system is and how to make connections between many aspects related to systems. In order to achieve this task, the students were working in a team, so using this tool, students identified what they need to achieve together, organised and carried out the task using different learning skills such as research and communication. It is also a great opportunity for me to learn how to best integrate sustainability learning and systems thinking into the ASDAN programme taking into account that the ASDAN program is directed to those students who are not enrolled in the IGCSE due to its high academic demands.
Context of lesson/case study:	Grade 7 and 9, ASDAN Curriculum Programmes, Stepping Stones
Participants (# and description):	2 students from Nigeria /Grade 7 and 9 (15 and 17 years old) - these students have been receiving ASDAN programme in pull out sessions. ASDAN programme aims to help these students develop and demonstrate a range of skills to manage their own learning, broaden their academic experience, and recognize personal achievements. These skills are taught in small group sessions in the Learning Support department.
Topic, Theme, or Key Understanding of unit/project:	**Module Environmental Challenges #1** Produce a newsletter to highlight an environmental issue of your choice. This challenge is part of a number of activities that ASDAN candidates need to complete. ASDAN candidates have to provide evidence and demonstrate skill development in different areas such as: working with others, improving learning, problem solving, research, discussion and oral presentation. Completing this challenge using the Sustainability Compass I have been able to provide my students with great opportunities to develop these skills in all areas of learning and to make connections between nature and their own life. I support my students to develop their awareness of our environment and the importance of protecting nature by reducing the global warming effect in our planet.
Length of unit/project:	Approximately 3 weeks
Resources/materials & setting required:	I used a great range of resources and materials for this challenge: Theme-related books and magazines, arts and crafts materials, computer, camera.

Lesson Plan/Description of the Project:

- Research about environmental issues and chose a particular topic about this.
- Research about global warming.
- Brainstorm together (teacher and student) ideas using the Sustainability Compass tool.
- Look for pictures and photos in books, magazine, and the internet.
- Summarize information related to the topic.
- Pull all the pages together and obtain the newsletter. (attached)

Teaching tips/ideas:

- Show a power point presentation about tips to write a good newsletter in easy steps.
- Teach an introductory session about Microsoft Office Publisher in order to familiarize my students with the programme.
- Develop ICT skills specifically in Microsoft Office Publisher Program.

Reflection

Plusses:

I decided to use the Sustainability Compass to complete this challenge into the ASDAN programme. In my opinion, it is the appropriate tool to initiate both, individual and collective thinking in response to the new information they had to learn.

The students worked in teams. They were given different parts to make up the system. This way they interchanged ideas, questions and comments. Besides, the students were able to develop their skills in all areas of learning as well as begin to develop habits in terms of sustainability that will be useful in future subjects, knowledge and experiences.

Challenges:

- Very ambitious challenge taking into account they were confronted with tasks they had never done before like using basic ICT skills in areas such as Microsoft Office publisher.
- The activity took more time than I we expected.

Suggestions for other practitioners and educators:

- Brainstorm ideas and choose the most appropriate Sustainability and Systems thinking tool for each challenge into the ASDAN programme module.
- Compile evidence of students' progress to scaffold learning.

Evidence and Resources:

ASDAN
April 2017

React Now!!!

SIMPLE ways to stop Global Warming.

- Turning off the water while you brush your teeth.
- Replace your incandescent bulbs when they burn out.
- Join a recycling program in your community, recycle your used newspapers, glass, plastic bottles and paper.
- Purchase products made from postconsumer recycled materials.
- Reduce Your Vehicle's Energy Consumption. Try to minimize the time you spend idling.
- Use the brackets and pedal lightly, avoiding hard stops and accelera tion.

In this edition:

"Humanity is facing a challenge unlike any we've ever had to confront. We are in an unprecedented period of change."

David Suzuki

GLOBAL WARMING!!!

The planet is warming, from North Pole to South Pole, and everywhere in between. The heat is melting glaciers and sea ice. It is also shifting precipitation patterns and the animals immigrate.

Some impacts are already happening. There are droughts and heavy rainfall. Warming is expected to be strongest in the Arctic. Ice is melting especially at the Earths poles. Adelie penguins on Antarctica, have declined where their numbers have fallen from 32,000 breeding pairs to 11000 in 30 years. Probable expansion of subtropical deserts. Warming is expected unequivocal and scientists are 95-100% certain that it is primarily caused by increasing concentrations of green house gases produced by human activities such as the burning of fossil fuels and deforestation. Precipitation (rain and snowfall) has increased across the globe, on average. Spruce bark beetles have boomed in Alaska because of 20 years of warm summers. The insects have chewed up 4 million acres of spruce trees. Other effects that could-happen later this century if warming continues. Sea levels would rise between 7 and 23 inches.

Hurricanes and other storms are likely to become stronger. Species that depend on one another may become out of sync. Floods and droughts will become more common. Less fresh water will be available. Some diseases will spread, such as malaria carried by mosquitoes.

Ecosystems will change, some species will move farther north or become more successful; others won't be able to move and could become extinct.

With less ice on which to live and fish for food, the polar bears will disappears, as well.

A CHANCE TO LIVE MORE

There are more greenhouse gases in the atmosphere, and more heat is trapped which makes the Earth warmer. The weather all over Earth is changing for example, summers are hotter and winters too. The conditions we are living in are perfect for life, and if the temperature rises it could be terrible for us and for many living things on Earth.

The effects will be different, some places will become drier and others will be wetter. There may be many storms, and floods. We don't know which areas of the world will be affected.

All over the world, these weather changes will affect the kind of crops that can be grown. Plants, animals and even people may find it difficult to survive in different conditions. Some crops, such as wheat and rice grow better in higher temperatures, but other plants such as maize and sugarcane do not.

The effect of a change in the weather on plant growth could lead to some countries not having enough food.

Sources: The Greenhouse Gas Effect | Infoplease.com

React Now!!!
Band 1, Ausgabe 1

Seite 2

HAVEN`T YOU REALIZED!

Coffee in the morning, make-up, update fast Facebook, drive to your workplace or school. Then at 8:00 PM hot shower, TV on while surfing in the internet till 23:00 PM.

Your daily plan may look different ,but for sure you have increased climate change.

Many of the every day products used derive from fuels, such as beauty products from petroleum, or the diesel used in cars. All the devices were made in industries which burn tons of fossil fuels.

We seem to forget how much we are damaging the world. Burning any carbon based fuel converts carbon to carbon dioxide (CO_2), unless it's stored, which usually isn't the case. The CO_2 gets released into the atmosphere and the increased concentration of it contributes to climate change.

As you are aware, CO_2 isn't lost in space but trapped on Earth due to greenhouse effect. We are increasing the surface temperature of Earth and call it global warming.

Although we know most of the basics, how we are damaging our beloved planet in theory ,we still don't seem to fully realize how many fossil fuels we are actually burning.

Glaciers are melting, destroying habitat of some animals like polar bears and Kaiser penguins. The water table is rising ,causing more flooding and island regions to be at risk.

To help our planet here are some changes you can make on how to use fossil fuels sustainable. This will be a step further to save our planet.

- Switch to electric vehicle rather than using vehicles which run on gas or oil, or...
- Switch to flexible-fuel cars which run on petrol or ethanol or a mixture of both
- Insulate all buildings better to shrink power consumption
- Use electric heat pumps instead of fossil fuel to shrink power consumption

"Practically every environmental problem we have can be traced to our addiction to fossil fuels, primarily oil."

Dennis Weaver

Consequences of oil spills. Fossil fuels cause direct and indirect pollution

http://interestingpeopleblogfacts.blogspot.com

(www.ilcoalassn.com and www.classzone.com)

GREENHOUSE EFFECT!

1. In a greenhouse, the energy from the sun passes through planet, soil and other objects in the greenhouse .Much of this abounded energy is converted to heat, which warms the greenhouse.

2. The glass helps to keep the greenhouse warm by trapping this heat .The atmosphere has a number of gases that often get in tiny amounts, in which trap the heat given by the Earth by making sure that the Earth`s temperature remains constant.

3. With more heat trapped on the Earth, the planet will become warmer, which means the weather all over will change. For example , summers will get hotter, and winters too. This may seem to be a good idea, but the conditions we are living in are perfect for life, and a large rise in temperature could be terrible for us and for any other living thing on Earth.

4. The Carbon dioxide to produce naturally, when people and animals breathe . Plants and trees absorb Carbon dioxide to live .Methane also comes from cattle as they digest their food . Gases also come from fields where rice is ground in the Paddy fields.

5. It is difficult for scientists to say how big the changes will be and where the worse effects will occur in the weather, sea levels and people.

THE DAMAGE WE CREATE USING COAL INDUSTRIES

Water pollution – waste from coal industry dumped into river
http://...

Coal industries don't only cause environmental problems.

The Farmington coal mine disaster. Killed 78 people. West

http://en.wikipedia.org

This is for the people who want to know what damage we are doing just because of ONE fuel industry.

Coal mining, especially surface mining requires large areas of land to be temporarily disturbed. This raises a number of environmental challenges such as soil erosion, dust, noise, water pollution, and impacts on local biodiversity. Although steps are taken to minimize damage, like carefully pre-planning projects, implementing pollution control measures, monitoring the effects of mining and restoring mined areas, the environmental impacts are still great.

Impacts

* Destroys landscapes, forests and wildlife habitats at the site of the mine when trees, plants, and topsoil are cleared from the mining area. This causes soil erosion, and destruction of agricultural land.
* When rain washes the loosened soil into streams, sediments pollute the waterways. This can hurt sea animal life and smother plant life downstream, and cause disfiguration of river channels and streams, which leads to flooding
* Increased risk of chemical contamination of water when minerals in earth seep into the water table, and watersheds are destroyed when disfigured land loses the water it once held.
* Causes dust and noise pollution when soil is disrupted with heavy machinery and coal dust is created in mines.
* Causes huge amount of waste, which often becomes toxic when it comes into contact with air and water.
* Lowers the water table, changing the flow of groundwater and streams. In Germany for example, over 500 million cubic metres of water are pumped out of the ground every year. Only a small percentage of this is used by industry or local towns – the rest is wasted.
* Coal mining produces also greenhouse gas emissions.

Go tell others the damage we are creating, maybe this will open people's eyes for sustainability.

Sources

* http://www.worldcoal.org
* http://www.greenpeace.org

„When it comes to global warming, coal is the gorilla in the room."

Jeff Goodell

PLANTS AND ANIMALS—CRYING AS WELL

As weather and temperature changes, the homes of plants and animals would be affected. For example, polar bears and seals, will have to find new land for hunting and living, if the arctic melts.

Many animals and plants may not be able to cope with these changes and could die.

In danger: Plants and animals

IF WEATHER AND TEMPERATURE

FOR EXAMPLE, POLAR BEARS AND SEALS WILL HAVE TO FIND NEW LAND FOR HUNTING AND LIVING IF THE ARCTIC MELTS.

MANY ANIMALS AND PLANTS MAY NOT BE ABLE TO COPE WITH THESE CHANGES AND COULD DIE DUE TO GLOBAL WARMING.

REACT NOW!!!

WE CAN STILL SAVE OUR PLANET

1. A lot of scientists agree that man`s activities are making the natural greenhouse effect stronger . If we carry on polluting the atmosphere with greenhouse gases, it will have very dangerous effects on the earth.
2. We should reduce using too much of electricity to avoid greenhouse gases or we can provide our own electricity .
3. We should use public transportation ,walk or bike. To avoid air travel, or purchase carbon offsets for your flights . Drive slower and more cautiously .

Sources: http://www. infloplease.com .

GREENHOUSE GASES

The Enhanced Greenhouse Effect

Some of the activities of men produce greenhouse gases. These gases keep increasing in the atmosphere. The balance of the greenhouse gases changes and this has effect on the whole planet.

The Natural Greenhouse Effect

The atmosphere has a number of gases often in tiny amounts, which trap the heat given out by the Earth.

The Greenhouse gases

Are very important and are mainly:

Water vapour : Occurs naturally in the atmosphere.

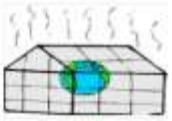
Carbon dioxide : Produced naturally when people and animals breathe. Plants and trees absorb carbon dioxide to live. Volcanoes also produce this gas. Carbon dioxide is not the same as carbon monoxide.

Methane : Comes from cattle as they digest their food. The gas also comes from fields were rice is grown in paddy fields.

Nitrous oxide : When plants die and rot, nitrous oxide is produced.

Ozone : Occurs naturally in the atmosphere .

Burning of Fossil Fuels Oil and Natural Gas.



The burning of fossil fuels- coal, oil and natural gases release carbon dioxide into the atmosphere . The cutting down and burning trees also produce a lot of carbon dioxide.

A group of greenhouse gases called the chlorofluorocarbons, - which are usually called CFCs have been used in aerosols , such as hair-spray cans , fridges and in making foam plastics. They are found in small amounts in the atmosphere. They are dangerous greenhouse gases because small amounts can trap large amounts of heat.

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