

Agenda – 28/1/16

9.15 – 9.30am	Day 2 - Teacher Training Sessions ➤ Arrival and refreshments
9.30 – 10.30am	Session 4 ➤ Global Goal 14 - Life below Water ➤ Investigate the challenges facing marine and coastal environments ➤ Investigate teaching resources on key issues
10.30- 10.45am	Refreshment break
10.45 – 12pm	Session 5 - Global Goal 15 – Life on Land ➤ Investigate the issues; forest management, desertification, land degradation and halting biodiversity loss ➤ Opportunities for teaching activities
12 – 12.45pm	Lunch
12.45 – 1.45pm	Session 6 - Global Goal 12 - Responsible Consumption ➤ In many ways the biggest challenge that humanity faces as it impacts and negatively impacts on all the other goals ➤ What are the issues? ➤ Opportunities for activities ➤ Investigate the principles of the circular economy
1.45 – 2pm	Plenary ➤ Evaluation of the sessions ➤ What's next?
2pm	Leave for Durham University Palace Library
2.30- 5pm	Visit to Antarctica Exhibition at Durham University Palace Green ➤ Meeting Melissa Swartz for talk and discussion ➤ Opportunity to explore the Royal Geographical Society Touring Exhibitions

Altogether better



Proposed Learning Outcomes

- ❖ Greater understanding of education for sustainable development
- ❖ Enhanced understanding of Global Goals (12, 14 and 15) and practical teaching and learning opportunities
- ❖ Opportunity for all delegates to discuss issues and share ideas

Altogether better





SUSTAINABLE DEVELOPMENT GOALS



www.un.org/sustainabledevelopment/sustainable-development-goals/

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A TO DO LIST FOR THE PLANET

BY: MARGREET DE HEER



THE GLOBAL GOALS
For Sustainable Development



WHAT A GREAT IDEA! THIS MAKES IT REALLY CLEAR WHAT NEEDS TO BE DONE!

WELL, GOOD LUCK WITH THAT! LET US KNOW WHEN YOU'RE DONE AND WE'LL THROW YOU A PARTY!



Altogether better



Global Goal Advocates

- Ghanaian President John Dramani Mahama and Norwegian Prime Minister Erna Solberg will co-chair the group.

The other Advocates include:

- Her Majesty Queen Mathilde of Belgium
- Her Royal Highness Crown Princess Victoria of Sweden
- Mr. Richard Curtis, Screenwriter, Producer and Film Director
- Ambassador Dho Young-Shim, Chairperson, United Nations World Tourism Organization's Sustainable Tourism for Eliminating Poverty Foundation
- Ms. Leymah Gbowee, Director, Gbowee Peace Foundation
- Mr. Jack Ma, Founder and Executive Chairman, Alibaba Group
- Mrs. Graça Machel, President, Foundation for Community Development
- Mr. Leo Messi, World Renowned Footballer, UNICEF Goodwill Ambassador
- Her Highness Sheikha Moza bint Nasser
- Ms. Alaa Murabit, Founder, The Voice of Libyan Women
- Mr. Paul Polman, Chief Executive Officer, Unilever
- Professor Jeffrey Sachs, Director, Earth Institute at Columbia University
- Ms. Shakira Mebarak, Artist, Advocate and Founder, Pies Descalzos Foundation, UNICEF Goodwill Ambassador
- Mr. Forest Whitaker, Founder and CEO, Whitaker Peace & Development Initiative, UNESCO Special Envoy for Peace and Reconciliation
- Professor Muhammad Yunus, Founder, Grameen Bank

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“Never before has it been so evident that we can address both climate change and sustainable development with the same measures. This is [your] moment to ensure we create jobs, ensure energy access, safeguard food and water, improve health and protect economic and social stability for the future”



Executive Secretary of the UN Framework Convention on Climate Change (UNFCCC),
Christiana Figueres, 29-6-15

Altogether better





Executive Secretary of the UN Framework Convention on Climate Change (UNFCCC),
Christiana Figueres

“You are consumers, future leaders, future homeowners, future..... everything! Choose how you live, choose whom you work for, choose what you buy..... and choose the kind of world you want to live in”

Speech to young people on Earth Day

Altogether better



Any questions?



Altogether better



Outdoor
And
Sustainability
Education
Specialists





Altogether better



Sustainable Development Goals

Goal 14: Life Below Water

Conserve and sustainably use the oceans, seas and marine resources

Facts:

- Oceans cover three quarters of the Earth's surface, contain 97 per cent of the Earth's water, and represent 99 per cent of the living space on the planet by volume
- Over three billion people depend on marine and coastal biodiversity for their livelihoods
- Globally, the market value of marine and coastal resources and industries is estimated at \$3 trillion per year or about 5 per cent of global GDP
- Oceans contain nearly 200,000 identified species, but actual numbers may lie in the millions
- Oceans absorb about 30 per cent of carbon dioxide produced by humans, buffering the impacts of global warming
- Oceans serve as the world's largest source of protein, with more than 3 billion people depending on the oceans as their primary source of protein
- Marine fisheries directly or indirectly employ over 200 million people
- Subsidies for fishing are contributing to the rapid depletion of many fish species and are preventing efforts to save and restore global fisheries and related jobs, causing ocean fisheries to generate US\$ 50 billion less per year than they could
- As much as 40 per cent of the world oceans are heavily affected by human activities, including pollution, depleted fisheries, and loss of coastal habitats

Altogether better

Ref: www.un.org/sustainabledevelopment/oceans



Goal 14: Life Below Water

Conserve and sustainably use the oceans, seas and marine resources

Targets

- By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
- By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans
- Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
- By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics
- By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information

Altogether better

Ref: www.un.org/sustainabledevelopment/oceans/



Goal 14: Life Below Water

Conserve and sustainably use the oceans, seas and marine resources

Targets (continued)

- By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing
- By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism
- Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries
- Provide access for small-scale artisanal fishers to marine resources and markets
- Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want

Altogether better

Ref: www.un.org/sustainabledevelopment/oceans/





GOAL 14: LIFE BELOW WATER



BY: MARISSET DE HEER



MOST OF THE PLANET'S SURFACE IS WATER! HERE'S WHAT WE MUST DO TO PROTECT THE OCEANS:



1. REDUCE AND PREVENT POLLUTION

2. PROTECT ECOSYSTEMS

3. END OVERTFISHING AND ILLEGAL FISHING

4. HELP FISHING COMMUNITIES TO DEVELOP SUSTAINABLE FISHING PRACTICES

5. SCIENTIFIC COOPERATION

- TO INCREASE KNOWLEDGE
- TO IMPROVE TECHNOLOGIES
- TO MINIMIZE OCEAN ACIDIFICATION

6. MAKE AND MAINTAIN INTERNATIONAL LAWS AGREEMENTS

Altogether



Curriculum Grid

	Activity	Subject Links
9-11	<ul style="list-style-type: none"> • Visit a coastal community and use it for a comparison local study. • Alternatively visit a beach and undertake some Beach School sessions. • Research how the sea and coastline impacts on all our lives 	Geography Science PSHE
11-14	<ul style="list-style-type: none"> • Investigate the impact of commercial fishing and illegal fishing on fish stocks and the general wellbeing of the oceans • What measures are been taken to replenish fish stocks 	Geography Science Citizenship
14-16	<ul style="list-style-type: none"> • Investigate an example of marine pollution from around the world. • What was its impact on the local environment and further afield? 	Geography Science Citizenship
16-18	<ul style="list-style-type: none"> • Can the oceans feed the world? Present a report on whether sustainable fishing is the answer to feeding the worlds increasing population. Investigate the 'Blue Revolution' is this the answer? 	Geography Science Literacy ICT

Altogether better



Opportunities for Learning



What is the Great Pacific Garbage Patch?

<https://www.youtube.com/watch?v=7c9mSVPXYxU>

Altogether better



Group Activity (15 mins)

- Agree on a target age group
- There is a huge amount of mis-information on the internet about floating trash islands.
- Create an effective enquiry to help students investigate this issue.
- What other Global Goals are connected to this issue?
- Produce a short curriculum plan or map
- Share your ideas



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Teaching Resources/ Ideas

Worlds Largest Lesson Website

- <https://www.tes.com/worldslargestlesson/lesson-plans/>

Specific Marine Lesson Plan

- <http://tg1wllcdn.bonsaitiger.com/localised/en/23%20Protect%20Life%20Below%20Water.pdf>

Global Dimension Website Activities

- <https://globaldimension.org.uk/worldslargestlesson/lifebelowwater>

Altogether better



Break Time



Altogether better





Altogether better



Sustainable Development Goals



Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss

Facts:

Forests

- Around 1.6 billion people depend on forests for their livelihood. This includes some 70 million indigenous people
- Forests are home to more than 80 per cent of all terrestrial species of animals, plants and insects

Desertification

- 2.6 billion people depend directly on agriculture, but 52 per cent of the land used for agriculture is moderately or severely affected by soil degradation
- As of 2008, land degradation affected 1.5 billion people globally
- Arable land loss is estimated at 30 to 35 times the historical rate
- Due to drought and desertification each year 12 million hectares are lost (23 hectares per minute), where 20 million tons of grain could have been grown
- 74 per cent of the poor are directly affected by land degradation globally

Altogether better

Ref:
www.un.org/sustainabledevelopment/biodiversity



Sustainable Development Goals



Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss

Facts:

Biodiversity

- Of the 8,300 animal breeds known, 8 per cent are extinct and 22 per cent are at risk of extinction
- Of the over 80,000 tree species, less than 1 per cent have been studied for potential use
- Fish provide 20 per cent of animal protein to about 3 billion people. Only ten species provide about 30 per cent of marine capture fisheries and ten species provide about 50 per cent of aquaculture production
- Over 80 per cent of the human diet is provided by plants. Only three cereal crops – rice, maize and wheat – provide 60 per cent of energy intake
- As many as 80 per cent of people living in rural areas in developing countries rely on traditional plant-based medicines for basic healthcare
- Micro-organisms and invertebrates are key to ecosystem services, but their contributions are still poorly known and rarely acknowledged

Altogether better

Ref:
www.un.org/sustainabledevelopment/biodiversity/



Sustainable Development Goals



- Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss

Targets

- By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements
- By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally
- By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world
- By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development
- Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species
- Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed
- Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products

Altogether better

Ref:

www.un.org/sustainabledevelopment/biodiversity/



Sustainable Development Goals



- Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss

Targets

- By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species
- By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts
- Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems
- Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation
- Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities

Altogether better

Ref:

www.un.org/sustainabledevelopment/biodiversity/





GOAL 15: LIFE ON LAND

BY: MARGREET DE HEER



AS A PART OF THE GLOBAL ECOSYSTEM OURSELVES, WE NEED TO CONSERVE AND PROTECT PLANT AND ANIMAL LIFE ON LAND!



REDUCE DEFORESTATION AND PLANT MORE TREES



COMBAT DESERTIFICATION



PROTECT AND PRESERVE ECOSYSTEMS



REVERSE LAND DEGRADATION



END THREATS TO ENDANGERED SPECIES

AND PROTECT BIODIVERSITY!



Altogether better



Curriculum Grid

Age Range	Opportunities	Subject Links
9-11	<ul style="list-style-type: none"> Adopt outdoor learning approaches (eg. Forest Schools; Food and Growing experiences) to help pupils establish an appreciation of the natural world both aesthetically and its wealth of resources Establish an after school growing club with parents/ local volunteers Introduce simple systems thinking (eco-systems; societal systems) 	Science Geography Personal, social and health education (PSHE)
11-14	<ul style="list-style-type: none"> Research the issue of deforestation around the world and the impact on soil, air quality and animals. Investigate organising a tree planting scheme in your local community 	Geography Science Citizenship
14-16	<ul style="list-style-type: none"> Eco-footprinting. How many equivalent hectares of land are required by people from a number of different countries around the world How can people reduce their footprint? Identify the impact of species loss since the industrial revolution across Europe. What measures are being taken to reverse this trend? 	Maths Science Geography Citizenship
16-18	<ul style="list-style-type: none"> Undertake fieldwork to identify land use in their local area and produce a report detailing how land is being used and how it could be made more sustainable Research land use in the past and undertake a comparison Predict future use to ensure environmental degradation is minimised and ideally enhanced 	Geography Maths Science Literacy Communication ICT

Altogether better



Opportunities for Learning (1)

- Undertake a personal carbon footprint audit (misleading title)
- <http://footprint.wwf.org.uk/> as a homework activity
- Do you think the results might alter your pupils actions and behaviour?



Altogether better



Opportunities for Learning (2)

- A more artistic project
- <http://www.footprintfriends.com/>



http://www.ringwoodbiology.co.uk/EcoSchools/Projects_2008-2009.htm

Altogether better



Opportunities for Learning (3)



<http://photo.greenpeace.org/archive/Deforestation-in-Central-Kalimantan-27MZIF3SF45A.html>

- What does this image portray? What, where, when, how?
- Answer: A network of access roads on former orang-utan habitat in Malaysia, now a Palm Oil plantation in 2014?

Altogether better



Teaching Resources/ Ideas

Worlds Largest Lesson Website

- <https://www.tes.com/worldslargestlesson/lesson-plans/>

Pollution Lesson Plan

- <http://tg1wllcdn.bonsaitiger.com/localised/en/18%20The%20Impact%20of%20Pollution%20on%20Our%20Planet%20and%20Our%20Lives.pdf>

Global Dimension Website Activities

- <https://globaldimension.org.uk/worldslargestlesson/lifeonland>



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Lunchtime



Altogether better



12 RESPONSIBLE
CONSUMPTION



Altogether better



Sustainable Development Goals



Goal 12: Ensure sustainable consumption and production patterns

Issues:

- Each year, an estimated one third of all food produced – equivalent to 1.3 billion tonnes worth around \$1 trillion – ends up rotting in the bins of consumers and retailers, or spoiling due to poor transportation and harvesting practices
- If people worldwide switched to energy efficient lightbulbs the world would save US\$120 billion annually
- Should the global population reach 9.6 billion by 2050, the equivalent of almost three planets could be required to provide the natural resources needed to sustain current lifestyles

Water

- Less than 3 per cent of the world's water is fresh (drinkable), of which 2.5 per cent is frozen in the Antarctica, Arctic and glaciers. Humanity must therefore rely on 0.5 per cent for all of man's ecosystem's and fresh water needs.
- Man is polluting water faster than nature can recycle and purify water in rivers and lakes.
- More than 1 billion people still do not have access to fresh water.
- Excessive use of water contributes to the global water stress.
- Water is free from nature but the infrastructure needed to deliver it is expensive.

Altogether better

Ref:

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





Goal 12: continued

Energy

- Despite technological advances that have promoted energy efficiency gains, energy use in OECD countries will continue to grow another 35 per cent by 2020. Commercial and residential energy use is the second most rapidly growing area of global energy use after transport.
- In 2002 the motor vehicle stock in OECD countries was 550 million vehicles (75 per cent of which were personal cars). A 32 per cent increase in vehicle ownership is expected by 2020. At the same time, motor vehicle kilometres are projected to increase by 40 per cent and global air travel is projected to triple in the same period.
- Households consume 29 per cent of global energy and consequently contribute to 21 per cent of resultant CO2 emissions.
- One-fifth of the world's final energy consumption in 2013 was from renewables.

Altogether better

Ref:

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





Goal 12: continued

Food

- While substantial environmental impacts from food occur in the production phase (agriculture, food processing), households influence these impacts through their dietary choices and habits. This consequently affects the environment through food-related energy consumption and waste generation.
- 3 billion tonnes of food is wasted every year while almost 1 billion people go undernourished and another 1 billion hungry.
- Overconsumption of food is detrimental to our health and the environment.
- 2 billion people globally are overweight or obese.
- Land degradation, declining soil fertility, unsustainable water use, overfishing and marine environment degradation are all lessening the ability of the natural resource base to supply food.
- The food sector accounts for around 30 per cent of the world's total energy consumption and accounts for around 22 per cent of total Greenhouse Gas emissions

Altogether better

Ref:

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



Sustainable Development Goals



Goal 12: Ensure sustainable consumption and production patterns

Targets

- Implement the 10-year framework of programmes on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries
- By 2030, achieve the sustainable management and efficient use of natural resources
- By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses
- By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment
- By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
- Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

Altogether better

Ref:

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



Sustainable Development Goals



Goal 12: Ensure sustainable consumption and production patterns

Targets (cont)

- Promote public procurement practices that are sustainable, in accordance with national policies and priorities
- By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature
- Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production
- Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products
- Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities

Altogether better

Ref:

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





GOAL 12: RESPONSIBLE CONSUMPTION AND PRODUCTION

BY: MARGREET DE HEER



WE MUST MAKE SURE THE **PRODUCTION PROCESS** FROM MANUFACTURER TO CONSUMER DOES NO HARM TO NATURE NOR HUMANITY AND GENERATES AS LITTLE WASTE AS POSSIBLE!



WE MUST HAVE **INTERNATIONAL AGREEMENTS** FOR THE HANDLING OF HARMFUL CHEMICALS.

PROTECTING WATER. AIR & SOIL.

WE MUST PREVENT **FOOD WASTE!**



Altogether better



Curriculum Grid

Age	Opportunities	Subject Links
9-11	<ul style="list-style-type: none"> • What things do we waste? • Why do we waste stuff? • Whose responsibility is it to deal with waste? 	Geography PSHE
11-14	<ul style="list-style-type: none"> • Is the human race addicted to shopping? Discuss. 	English Citizenship
14-16	<ul style="list-style-type: none"> • Research the concept of a circular economy. How does this differ from how most goods are produced? • What could be the economic/ social and environmental benefits of changing our global models of production? 	Design and technology Geography
16-18	<ul style="list-style-type: none"> • Is fair trade the answer to unsustainable consumption? Assess the impact of fair trade and suggest alternative methods around sustainable resource consumption. 	Geography Citizenship

Altogether better



Opportunities for Learning



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

Altogether better



Demo Version, <http://www.verydoc.com> and <http://www.verypdf.com>

Opportunities for Learning

Develop lesson plans for:

1) Should it be the consumers responsibility to ensure that the goods and services we use are sustainably produced? Debate

2) There is an opportunity for our students to be able to redesign everything.

- How can we help our students understand the opportunity and see future career possibilities? What plans could you put in place in your school?

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Further Resources

Excellent resources from Ellen MacArthur Foundation:
Primary and Lower Ability

- <http://www.made2bmadeagain.org/>

Secondary and Further Education

- <http://www.ellenmacarthurfoundation.org/programmes/education/schools-colleges>
- <https://kumu.io/ellenmacarthurfoundation/educational-resources#ce-general-resources-map/key-for-general-resources-map>

From the USA – online store (not free)

- <https://www.facingthefuture.org/ShopCurriculum/ShopCurriculaCatalog/tabid/652/Default.aspx#.VqIYrPmLTIU>

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Suggested Global Goals Websites

Information:

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

<http://www.globalgoals.org/>

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

Teaching Resources

<https://www.tes.com/worldslargestlesson/>

<https://globaldimension.org.uk/worldslargestlesson>

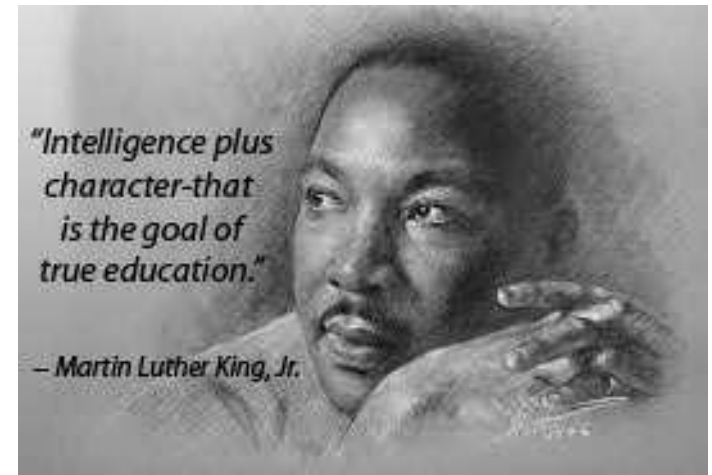
Altogether better



Plenary – so what have we learnt?

Proposed Outcomes for today

- ❖ Enhanced understanding of Global Goals 12, 14 and 15 and practical teaching and learning opportunities
- ❖ Opportunity for all delegates to discuss issues and share ideas



Any questions?

Altogether better



How could this global goals project impact upon your role in school?



*... It is not easy
being green...*

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Outdoor
And
Sustainability
Education
Specialists



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