



WALK

#walktheglobalwalk

**Teacher Briefing Pack
Wales Year 2:
SDG 13 Climate Action**



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financial support of the European
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reflect the views of the European Union.

This Teacher's Briefing and Resource Pack is the result of an intense collaboration of the Walk the Global Walk Educational Task Force consisting of different European organisations. This product reflects an essential European dimension and is also fully adaptable to each national context, with the aim of developing a common European learning community.

Key competencies for sustainability

Systems thinking competency: the abilities to recognize and understand relationships; to analyse complex systems; to think of how systems are embedded within different domains and different scales; and to deal with uncertainty.

Anticipatory competency: the abilities to understand and evaluate multiple futures – possible, probable and desirable; to create one's own visions for the future; to apply the precautionary principle; to assess the consequences of actions; and to deal with risks and changes.

Normative competency: the abilities to understand and reflect on the norms and values that underlie one's actions; and to negotiate sustainability values, principles, goals, and targets, in a context of conflicts of interests and trade-off s, uncertain knowledge and contradictions.

Strategic competency: the abilities to collectively develop and implement innovative actions that further sustainability at the local level and further afield.

Collaboration competency: the abilities to learn from others; to understand and respect the needs, perspectives and actions of others (empathy); to understand, relate to and be sensitive to others (empathic leadership); to deal with conflicts in a group; and to facilitate collaborative and participatory problem solving.

Critical thinking competency: the ability to question norms, practices and opinions; to reflect on own one's values, perceptions and actions; and to take a position in the sustainability discourse.

Self-awareness competency: the ability to reflect on one's own role in the local community and (global) society; to continually evaluate and further motivate one's actions; and to deal with one's feelings and desires.

Integrated problem-solving competency: the overarching ability to apply different problem-solving frameworks to complex sustainability problems and develop viable, inclusive and equitable solution options that promote sustainable development, integrating the abovementioned competences.

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INDEX

SETTING THE SCENE	3
INTRODUCTORY LESSON PLAN: The colours of a sustainable world.....	11
COMPULSORY STARTER LESSON PLAN: Climate Change –What you need to know.....	14
LESSON PLAN 1: Climate change and the human dimension: what on earth is going on?.....	20
LESSON PLAN 2: Climate change and the environmental dimension: the impact on our natural world.....	28
LESSON PLAN 3: Climate change and the economic dimension	37
COMPULSORY FINAL LESSON PLAN: Climate Action - Don't just sit there!	40

OVERVIEW

Teacher Briefing Pack Wales: SDG 13 Climate Action

Introduction	Human Dimension	Environmental Dimension	Economic Dimension	Compulsory Final Lesson Plan
<p>Overview</p> <p>Global Citizenship Education</p> <p>Sustainable Development Goals</p> <p>Climate Change concepts</p> <p>Treaties</p> <p>SDG 13 targets and indicators</p> <p>Facts and figures on Climate Change</p> <p>Framework of TBP</p> <p>Portrait of an SDG13 Champion</p>	<p>10-18 years olds</p> <p>2 hour lesson plan :</p> <p>What on Earth is going on?</p> <ol style="list-style-type: none"> 1. Resilience 2. Resilience & response 3. Climate change migration 4. Local context 	<p>10-15 year olds</p> <p>2 hour lesson plan:</p> <p>Impact on our Natural Environment</p> <ol style="list-style-type: none"> 1. Impact 2. Interdependence 3. Trees & Forests 4. Wildlife & plants 5. Local actions and organisations on the world stage 	<p>14-18 year olds</p> <p>2 hour lesson plan:</p> <p>The Economics of Climate change</p> <ol style="list-style-type: none"> 1. Analysis of infographic 2. Introduction to economic issues 3. Green Climate Fund - Case study from Lesotho 4. Gross Domestic Product 	<p>10-18 year olds</p> <p>2 hours & independent activities</p> <p>Don't just sit there!</p> <ol style="list-style-type: none"> 1. Greta Thunberg – be a changemaker 2. Reasons for action 3. Measure your environmental footprint and carry out a school audit
<p>Introductory lesson plan</p> <p>Colours of a Sustainable World:</p> <p>Recap or introduction to all SDGs</p>	<p>Follow on activities:</p> <ol style="list-style-type: none"> 1. Lesotho case study – El Niño 	<p>Follow on activities:</p> <ol style="list-style-type: none"> 1. Palm Oil Plantation Role Play 	<p>Follow on activities:</p> <ol style="list-style-type: none"> 1. Link between GDP and CO2 – what would you say to Trump? 2. Prosperity for All? – A Low Carbon Wales? 	<p>Follow on activities:</p> <ol style="list-style-type: none"> 1. “I wish for you” pledges 2. Artists and Climate Change (Powerpoint) 3. Debate: “We should leave it to the government to sort out the climate crisis”
<p>Compulsory starter lesson plan</p> <p>What you need to know</p> <p>Explore key terms and concepts, including facts, myths and the United Nations Framework Climate Convention (UNFC)</p>	<p>Follow on activities:</p> <ol style="list-style-type: none"> 2. Europe’s role in food & climate justice 3. Food & climate resources change from Young Peoples Trust for the Environment 	<p>Follow on activities:</p> <ol style="list-style-type: none"> 2. Visualise your carbon emissions in terms of trees 3. Trees that refuse to give up! 	<p>Follow on activities:</p> <ol style="list-style-type: none"> 1. Budgeting – for a Low Carbon Wales 2. Create a Digital media campaign – you are our Future Generation 	

Teacher Briefing Pack 2: SDG 13 Climate Action

Introduction

This Teacher Briefing Pack 2 is part of Walk the Global Walk's comprehensive educational programme supporting teachers and learners to engage critically with current global trends and issues through the Sustainable Development Goals (SDGs). The main target group of learners is KS3 but there is much here that is also suitable for younger and older pupils – adaptations are suggested in the lesson plans.

It is intended for teachers, like you, keen to embed Global Citizenship and Sustainable Development topics and methodology within your discipline and/or to develop cross-curricular lessons, collaborating with other colleagues.

Teacher Briefing Pack 2 (TBP2) focuses on “SDG 13: Climate Action - Take urgent action to combat climate change and its impacts” and follows Teacher Briefing Pack 1, dedicated to “SDG 11: Sustainable Cities and Communities”.

Each plan follows the pedagogical approach learn-think-act to help build knowledge and improve understanding, invite students to reflect critically and include some tangible actions that involve the students, the school as a whole, and the local community where relevant.

Efforts have been made to include a Welsh dimension and context as well as global perspectives.

Appendices and PowerPoint presentations are available in Welsh and links are given to Welsh-medium resources. Unfortunately it has not always been possible to provide Welsh translations for infograms.

TBP2 consists of:

- Introductory lesson plan on the SDGs (1 hour) (this was also included in our first TBP on SDG11 so you may have covered it if you took part in the project in 2018/19).
- Compulsory starter lesson plan on SDG13 - What you need to know (1 hour).
- Lesson plans focusing on different aspects of Climate Action namely 1) Climate Change and the Human Dimension ; 2) Climate Change and the Environmental Dimension; 3) Climate Change and the Economic Dimension (2 hours each)
- Compulsory final lesson plan on Climate Action: Don't just sit there! (1 hour)

PowerPoint presentations are provided for all lesson plans apart from the introductory one.

Please note that the timings given in the plans are only an approximation.

TBP2 is flexible and you can choose to work with your students at different levels, implementing between 1 and 3 lesson plans in addition to the compulsory ones. Additional activities are also suggested so you can adapt, extend and deepen the learning as you wish.

The lesson plans themselves are not prescriptive and learning methodologies suggested are also interchangeable. The PowerPoint presentations are provided in an editable format so you can make any changes you see fit.

NB. When preparing materials for the activities, please consider environmentally-friendly options such as using scrap paper.

Finally Climate Change is a complex issue and inevitably it has not been possible to cover every aspect in a resource of this nature. This pack has been created with non- specialist teachers in mind as well as those with specialist knowledge.



SETTING THE SCENE

LONDON, UK - February 15, 2019: Protestors with banners at a Youth strike for climate march in central London

Global Citizenship Education, Sustainable Development and the School Curriculum

It is increasingly evident that we live in a complex and globalised world. The global dimension is part of our daily lives and poses challenges, especially perhaps to young people who can find it difficult to understand and can lack opportunities to express their own views and feelings and take action. The formal school system represents the safest, most inclusive space for students to learn about, reflect upon and test out the global competences that are needed now and for the future.

From August 2018, we have seen an example of global citizenship in action with 15 year old Greta Thunberg, her #strike4climate and movement #FridaysForFuture protesting against lack of action on the climate crisis.

The Council of Europe, the UNESCO, GENE (Global Education Network Europe) and other important organisations and networks worldwide have helped develop Global Citizenship Education and Sustainable Development strategies and practices in collaboration with national and local governments.

Global learning has a strong tradition in Wales. It builds upon ESDGC (Education for Sustainable Development and Global Citizenship) and the Curriculum Cymreig which fosters an understanding of an outward looking and international Wales, and is also an integral part of the Welsh Baccaulaureate through the Global Citizenship Challenge.

Taking part in the Walk the Global Walk project and using this pack will help to develop learners' skills of Critical Thinking, Problem Solving, Creativity and Innovation and provide young people with opportunities to understand and respond to global issues.

However, as the Donaldson review of the curriculum highlighted, these skills have a key role to play in developing 'ethical, informed citizens of Wales and the world' and there is a strong argument that they should be introduced towards the beginning of a child's education and developed throughout their time in school rather than being left until Year 10.

Crucially global citizenship education is at the heart of the new curriculum under development in Wales; one of the four statutory purposes is to develop children and young people as 'ethical, informed citizens of Wales and the world.' The whole curriculum is being based on these four purposes and this pack will help develop aspects of several of these and has great relevance for the Areas of Learning and Experience identified.



Flooding in Carmarthen- Storm Callum October 2018

Global Citizenship Education and the Sustainable Development Goals

Your role as a teacher is crucial in creating a more sustainable world. All around the globe, teachers are uniting to promote Global Citizenship Education and the Walk the Global Walk project is one example. Indeed, we are not alone: every year, in September, the UN launches the World's Largest Lesson (<http://worldslargestlesson.globalgoals.org>), a platform with lesson plans and materials to motivate teachers to teach about the Sustainable Development Goals (SDGs), also called Global Goals or Agenda 2030.

In 2015, conscious of the interconnectedness of our world, world leaders launched the SDGs, “a plan of action for people, planet and prosperity” to be fulfilled by 2030. The SDGs provide clear, quantitative targets, expected outcomes and have a global scope, stressing the concept and the actions needed for real, sustainable development. Greta made the adjective “sustainable” even clearer to the world: “The year 2078, I will celebrate my 75th birthday. If I have children maybe they will spend that day with me. Maybe they will ask me about you. Maybe they will ask why you didn't do anything while there still was time to act”, she said at the UN CLIMATE CHANGE CONFERENCE (COP 24) in Poland, 2018.

Sustainability has a strong bond with human rights and environmental, human and economic justice. Through envisaging a world in which the needs of the most vulnerable are met, the 2030 Agenda can contribute substantially to the realisation of Human Rights. Indeed, we have seen that students can gain a better understanding of human rights through the SDGs and are able to fully understand what “sustainability” means for future generations.

Education holds a central place within Agenda 2030: it is a goal in itself and a transversal way in which sustainable development can be attained, as the only way to break the cycle of poverty and facilitate social advancement is to guarantee quality education for everyone. Education, indeed, should equip citizens with a set of knowledge, values, attitudes and skills that can be used in any field of work, in any part of the world.

For this reason, SDG 4 “Quality Education” aims to “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” and promotes Global Citizenship Education as a universal practice:

SDG 4 Quality Education - Target 4.7	Indicator 4.7.1
By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, amongst others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.	Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in: (a) national education policies, (b) curricula, (c) teacher education and (d) student assessment

For further information:

Videos:

- United National Development Programme: Transitioning from the MDGs to the SDGs
https://www.youtube.com/watch?v=5_hLuEui6ww
- United National Foundation: A Look at the Sustainable Development Goals
<https://www.youtube.com/watch?v=5G0ndS3uRdo>
- Michael Green, TED Talk How We Can Make the World a Better Place by 2030
https://www.ted.com/talks/michael_green_how_we_can_make_the_world_a_better_place_by_2030

Websites:

- <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>
- Incheon Declaration Education 2030 and Framework for Action towards SDG
<http://unesdoc.unesco.org/images/0024/002456/245656E.pdf>
- Learning Cities and the SDGs: A Guide to Action
<http://unesdoc.unesco.org/images/0026/002604/260442e.pdf>

Treaties and initiatives fundamental for SDG 13 Climate Action

IPCC - The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change. It currently has 195 member countries and it provides governments with scientific information that they can use to develop climate policies. IPCC reports are also a key input for international climate change negotiations.

Source: <https://www.ipcc.ch/about/>

KYOTO PROTOCOL - The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change, which commits its Parties by setting internationally binding emission reduction targets.

Recognizing that developed countries are principally responsible for the current high levels of greenhouse gas emissions in the atmosphere as a result of more than 150 years of industrial activity, the Protocol places a heavier burden on developed nations under the principle of “*common but differentiated responsibilities*”.

The Kyoto Protocol was adopted in Kyoto, Japan, on 11 December 1997 and entered into force on 16 February 2005.

Source: https://unfccc.int/kyoto_protocol

COP 26 2020 – The 26th session of the Conference of the Parties (COP 26) to the UN Climate Change Conference is expected to take place from 9-19 November 2020, at a location to be determined.

Source: <https://sdg.iisd.org/events/2020-un-climate-change-conference-unfccc-cop-26/>

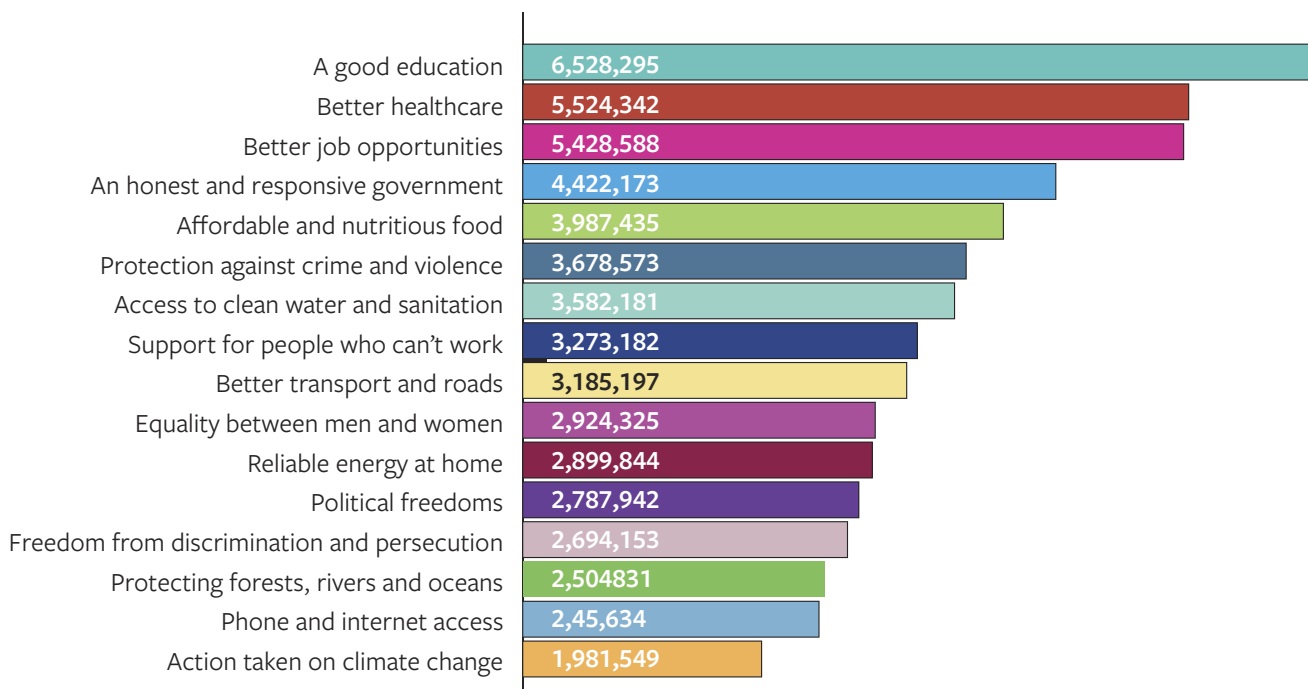
When the 17 SDGs were being created, the UN surveyed a sample of citizens asking what they thought were the priorities for the world for the period 2015-2030. Remarkably action on climate change was seen as the lowest priority.

However, SDG 13 is considered a priority to meet all the other SDGs. In fact, as stated by the United Nations, “*Climate change presents the single biggest threat to sustainable development everywhere and its widespread, unprecedented impacts disproportionately burden the poorest and most vulnerable. Urgent action to halt climate change and deal with its impacts is integral to the successful implementation of the Sustainable Development Goals (SDGs)*”.




Source: <https://www.un.org/sustainabledevelopment/climate-change/>

Results of UN Survey on world priorities for 2015 -2030





For this reason, it is essential to raise awareness of the need for climate action and to develop understanding of climate change. If citizens are aware of the consequences and the threats posed by climate change then they will have a better understanding of the links with other SDGs and will realize that taking action on climate change will help make a more sustainable world.  Maybe by 2030, citizens will put climate change as the top priority if the UN poses this question again...

Watch the video: Climate Action for Sustainable Development, Secretary-General António Guterres calls for global action on climate change

<https://www.youtube.com/watch?v=VNe-jBVij-g> (02:40 minutes)

“Scientists have been telling us for decades, over and over again. Far too many leaders have refused to listen [...] and we see the results. In some situations, they are approaching scientists’ worst-case scenarios.”

“Everyday we fail to act is a day that we step a little closer towards a fate that none of us wants – a fate that will resonate through generations in the damage done by humankind and life on earth. Our fate is in our hands. I count on you all.”

Climate change is now affecting every country on every continent. It is disrupting national economies and affecting lives, costing people, communities and countries dearly today and even more tomorrow. Weather patterns are changing, sea levels are rising, weather events are becoming more extreme and greenhouse gas emissions are now at their highest levels in history. **If no action is taken, the earth’s average surface temperature is likely to surpass 3 degrees centigrade this century.**

Affordable, scalable solutions are now available to enable countries to leapfrog to cleaner, more resilient economies. The pace of change is quickening as more people are turning to renewable energy and a range of other measures that will reduce emissions and increase adaptation efforts. Climate change, however, is a global challenge that does not respect national borders. It is an issue that requires solutions to be coordinated at an international level to help developing countries move toward a low-carbon economy.

To strengthen the global response to the threat of climate change, countries adopted the Paris Agreement at the COP21 in Paris, which came into force in November 2016. **The countries agreed to work to limit global temperature rise to well below 2 degrees centigrade.** As of April 2018, 175 countries had ratified the Paris Agreement and 10 developing countries had submitted their first version of their national adaptation plans for responding to climate change.

Source: <https://www.un.org/sustainabledevelopment/climate-change/>

	TARGETS	INDICATORS
13.1	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.	13.1.1 - Number of deaths, missing persons and persons affected by disaster per 100,000 people 13.1.2 - Number of countries with national and local disaster risk reduction strategies 13.1.3 - Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies
13.2	Integrate climate change measures into national policies, strategies and planning	13.2.1 - Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)
13.3	Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	13.3.1 - Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula 13.3.2 - Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions
13.4	Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	13.A.1 - Mobilized amount of united states dollars per year starting in 2020 accountable towards the \$100 billion commitment
13.5	Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities * Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.	Number of least developed countries and small island developing states that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities 13.B.

Source: <https://sustainabledevelopment.un.org/sdg13>

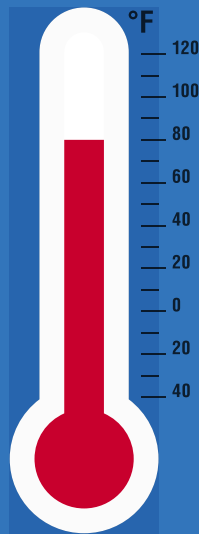
A QUESTION FOR YOU: Looking at the indicators above, is your school promoting actions to fight climate change? Does your school already do something to contribute to these indicators?

Some facts and figures about climate change

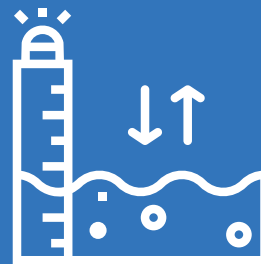
As a teacher, you may be completely familiar with teaching about climate change or this may be the first time that you bring this important issue into your discipline. For this reason, we would like to share some essential information from the Intergovernmental Panel on Climate Change:

From 1880 to 2012, average global temperature increased by 0.85°C.

To put this into perspective, for each 1 degree of temperature increase, grain yields decline by about 5 per cent. Maize, wheat and other major crops experienced significant yield reductions between 1981 and 2002 due to a warmer climate.



Oceans have warmed, the amounts of snow and ice have diminished and sea level has risen.



From 1901 to 2010, the global average sea level rose by 19 cm as oceans expanded due to warming and ice melted. The Arctic's sea ice extent has shrunk in every successive decade since 1979, with 1.07 million km² of ice loss every decade.

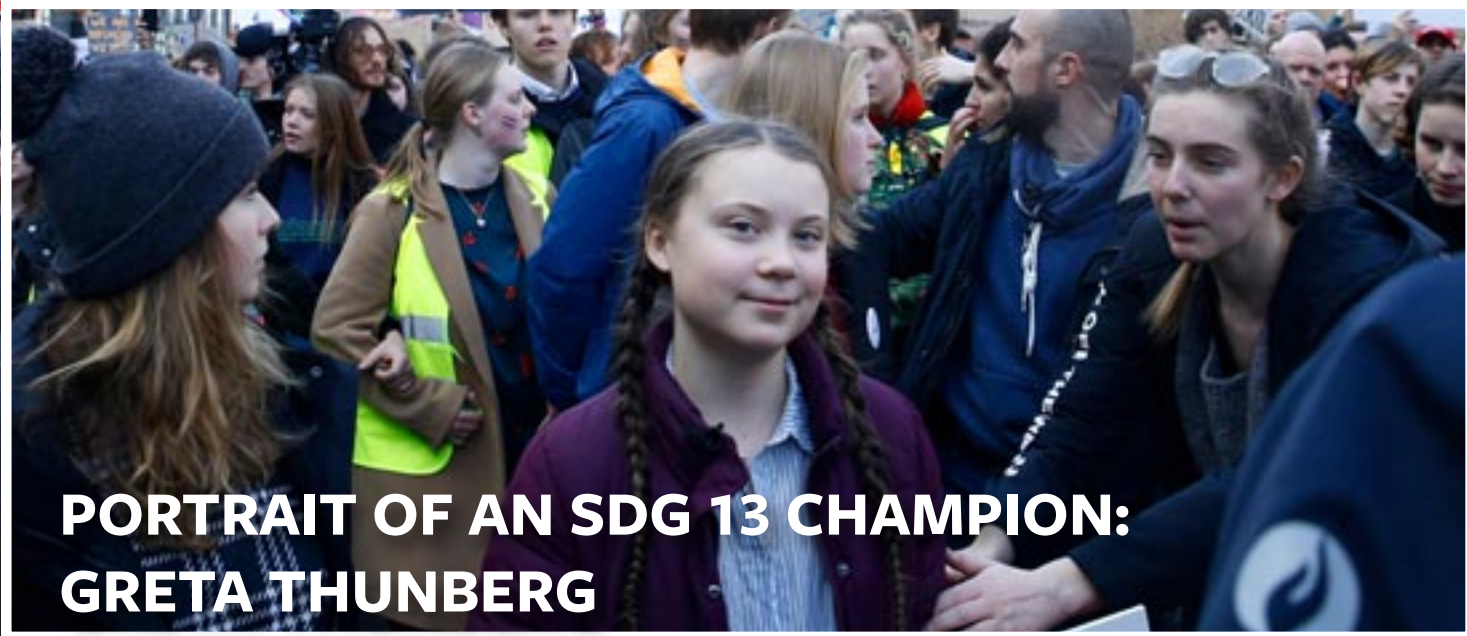
Given current concentrations and on-going emissions of greenhouse gases, it is likely that by the end of this century, the increase in global temperature will exceed 1.5°C compared to 1850 to 1900 for all but one scenario.

The world's oceans will warm and ice melt will continue. Average sea level rise is predicted as 24 – 30cm by 2065 and 40-63cm by 2100. Most aspects of climate change will persist for many centuries even if emissions are stopped.

Global emissions of carbon dioxide (CO₂) have increased by almost 50 per cent since 1990.



Emissions grew more quickly between 2000 and 2010 than in each of the three previous decades. It is still possible, using a wide array of technological measures and changes in behaviour, to limit the increase in global mean temperature to two degrees Celsius above pre-industrial levels. Major institutional and technological change will give a better than even chance that global warming will not exceed this threshold.



PORTRAIT OF AN SDG 13 CHAMPION: GRETA THUNBERG

BRUSSELS, BELGIUM. 21st February 2019. Swedish 16-year-old climate activist Greta Thunberg takes part in a march for the environment

What can we learn from a 16-year-old?

At only 16 years of age, the Swedish climate change activist Greta Thunberg has got the whole world listening to her. On the 20th August 2018, Greta then aged 15 decided not go to school, instead sat alone on the floor outside the Swedish Parliament with a handmade banner 'on school strike for the climate'. She wanted to draw attention to the climate change crisis that as a world we face. She asked "why should I be studying for a future that soon will be no more when no-one is doing anything whatsoever to save that future?"

She fears for the future and especially for that of her generation. She wants the older generation, politicians and the decision makers to realise that by not acting with enough urgency they are 'stealing our future'. She wants them to 'act as if the house is on fire. Her message is 'I want you to panic'.

In an interview with Jonathan Watts of the Guardian newspaper Greta said that on that first school strike day, outside the Swedish Parliament she sat alone from 8.30am to 3pm. However, on the second day people started to join her and that 'after that there were people there all the time'. Her fight has helped other young people to become aware of the human, economic and environmental impact of this looming climate crisis. It has also helped them to realise that their voice matters. The result is that there have been school strikes for climate across many countries and #futureforfridays has become a global phenomenon. Young people are standing with Greta and insisting that they are listened to.

Since that first day in August 2018, Greta has spoken to world leaders and campaigned at rallies across many different countries. In a significant speech at the World Economic Forum, in Davos in 2018, she said "yes we are still failing but there is still time to turn everything around. We can still fix this" but "I don't want your hope, I want you to act as if the house was on fire – because it is".



STOCKHOLM, SWEDEN - MARCH 22, 2019: 16-year-old Swedish climate activist Greta Thunberg demonstrating in Stockholm on Fridays.

Key points from Greta:

1. Reduce co2 emissions by at least 50%
2. Recognize overall failures of our current systems
3. Solving the climate crisis is the greatest and most complex challenge
4. Stop the emissions of greenhouse gases.
5. Create transformational action that will safeguard the future living conditions for humankind
6. Wider public awareness and understanding of our carbon budgets
7. The bigger your carbon footprint is, the bigger your moral duty. The bigger your platform the bigger your responsibility.



www.facebook.com/gretathunbergsweden



[@gretaThunberg - Twitter](https://twitter.com/gretaThunberg)



<https://www.ted.com>

<https://www.fridaysforfuture.org/greta-speeches>

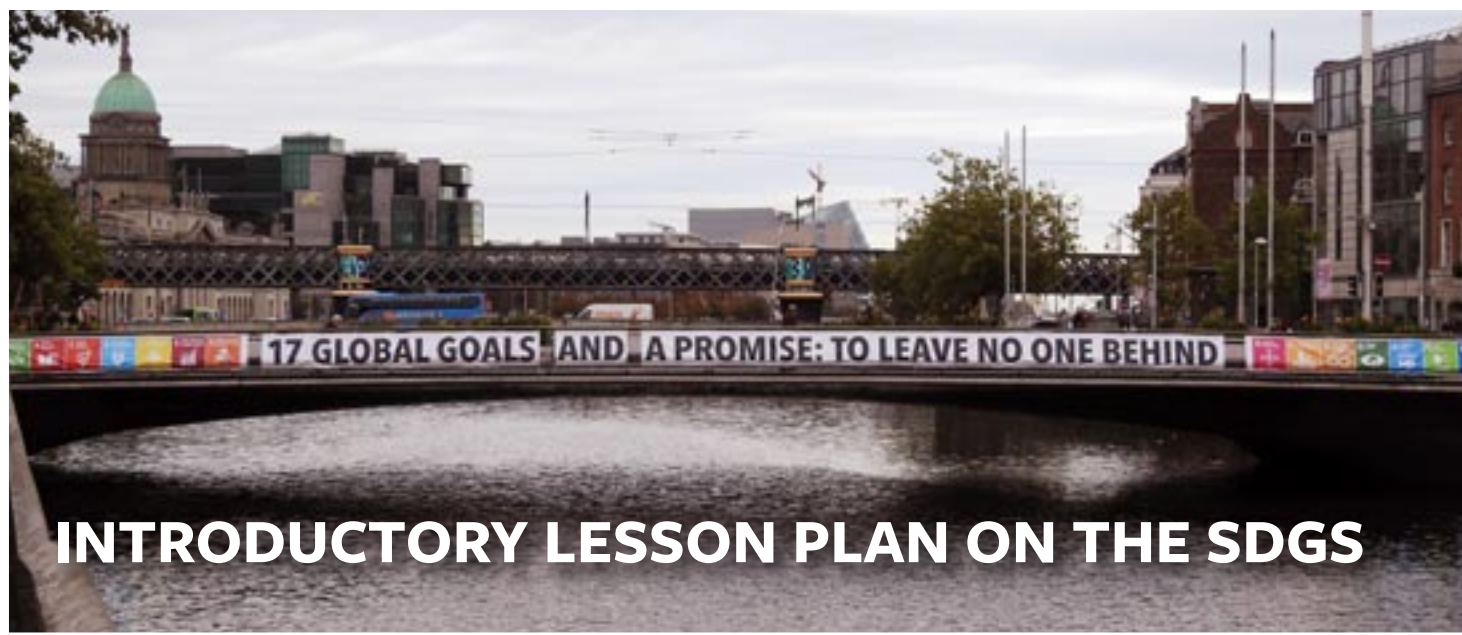


Many young people are worried about climate change. They know that, unless citizens are totally aware of what climate change is, its causes and its consequences and our countries really implement actions to fight climate change, they will not have the same possibilities that other generations have had.

“We are in the midst of the sixth mass extinction and the extinction rate is up to 10,000 times faster than what is considered normal, with up to 200 species becoming extinct every single day. Erosion of fertile topsoil, deforestation of our great forests, toxic air pollution, loss of insects and wildlife, the acidification of our oceans. These are all disastrous trends being accelerated by a way of life that we, in our financially fortunate part of the world, see as our right to simply carry on”.

 https://www.youtube.com/watch?v=FWsM9-_zrKo
(full vision recommended, otherwise 00:00 - 01:45)

Climate change is a multigenerational and intergenerational issue so we need to involve not only our learners but also the wider school and local community. We need to think how to involve and engage with other institutions, civil society, and businesses as well. This is why our lesson plans include ideas for actions because SDG13 is not called Climate Change but Climate Action and if we want to improve matters, we all need to start taking this seriously.




INTRODUCTORY LESSON PLAN ON THE SDGS

Lesson Plans

TITLE:	THE COLOURS OF A SUSTAINABLE WORLD
AGE GROUP	10-18 years old
ESTIMATED DURATION:	1 hour for implementation
MATERIALS:	PC, video projector, speakers or an interactive whiteboard. To be prepared in advance: Print or show: Appendix 1, 2 and 3
ROOM REQUIREMENTS:	Movable chairs and tables and space to work in groups.
OBJECTIVES:	<ul style="list-style-type: none"> - To learn about the 17 SDGs so as to understand the bigger picture; - To reflect on the icons and the meaning of each SDG; - To understand the universality and interconnectedness of the SDGs.
GCE Main Competences developed	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Systems thinking competencies <input checked="" type="checkbox"/> Anticipatory competency <input checked="" type="checkbox"/> Normative competency <input checked="" type="checkbox"/> Strategic competency <input checked="" type="checkbox"/> Collaboration competency <input checked="" type="checkbox"/> Critical thinking competency <input checked="" type="checkbox"/> Self-awareness competency <input checked="" type="checkbox"/> Integrated problem-solving competency
SDGs involved	All of the 17 SDGs

DESCRIPTION OF THE ACTIVITIES:

00:00 – 00:05	The colours of a sustainable world <ul style="list-style-type: none">- Tell learners they are going to start a journey all around our sustainable world.- Divide the class into groups of three people and pairs so that at least two students work on one Sustainable Development Goal. There are 17 SDGs and they all have to be covered. 5 min
00:05 – 00:15	<ul style="list-style-type: none">- Give each pair/group a card featuring one SDG and ask them to look carefully at it and discuss what they think each icon represents. You will find the cards in Appendix 1.
00:15 – 00:35	<ul style="list-style-type: none">- Ask them to share their ideas. You can note them down on the board.
00:35 – 00:45	<ul style="list-style-type: none">- After every group/pair has spoken, ask them whether they think these cards have something in common
00:45 – 00:50	<ul style="list-style-type: none">- Show the video “The Sustainable Development Goals – Action Towards 2030” https://www.youtube.com/watch?v=9-xdy1Jr2eg
00:50 – 00:60	<ul style="list-style-type: none">- They all should have their answers now. Recap by asking these simple questions: what are the SDGs? When was this “pact” signed and by whom? Provide them with the right definitions provided in the Introduction of this Teachers’ Briefing Pack “Global Citizenship Education and Sustainable Development Goals”.- Show them the 17 SDGs (See Appendix 2) and ask them to write the name of the SDG on the card. You can keep them in the room, sticking them on the walls! If you want them to understand the comprehensive dimension of SDGs, you can show them the image contained in Appendix 3 which provides a new understanding on where each goal sits at macroscopic level. <p> Take a picture of the final poster, or of the notes on the board, and share on the WtGW platform and the WtGW project platform or on social media using @GoalWales #wtgw #climateaction #sdg13 and with the title “The colours of a sustainable world”.</p>

ADAPTATION SUGGESTIONS FOR YOUNGER LEARNERS

There is an alternative for the video proposed suitable both for younger and older students, involving Malala:
https://www.youtube.com/watch?v=ry_9SU0eq9M

REFERENCES: The activity “The colours of a sustainable world” is inspired by
<http://worldslargestlesson.globalgoals.org/introduce-the-global-goals/>

Appendix 1



Appendix 2




Appendix 3





COMPULSORY STARTER LESSON PLAN

TITLE:	CLIMATE CHANGE: WHAT YOU NEED TO KNOW
AGE GROUP	10-18 years old
ESTIMATED DURATION:	1 hour for implementation
MATERIALS:	<p>The PowerPoint Presentation Climate Change: What you need to know</p> <p>Appendix 4 to be printed</p> <p>Appendices 5 and 6 to be shown</p> <p>Post-its or bits of scrap paper</p>
ROOM REQUIREMENTS:	Movable chairs and tables and space to work in groups.
OBJECTIVES:	<ul style="list-style-type: none"> - To develop knowledge & understanding of climate change - To learn about how Climate Change has impacted different communities across the world - To understand the rationale behind the need for climate change action
GCE Main Competences developed	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Systems thinking competencies <input checked="" type="checkbox"/> Anticipatory competency <input checked="" type="checkbox"/> Normative competency <input checked="" type="checkbox"/> Strategic competency <input checked="" type="checkbox"/> Collaboration competency <input checked="" type="checkbox"/> Critical thinking competency <input checked="" type="checkbox"/> Self-awareness competency <input checked="" type="checkbox"/> Integrated problem-solving competency
DISCIPLINES	All disciplines
SDGs involved	<p>SDG 4 – Quality Education</p> <p>SDG 13- Climate Action</p> <p>SDG 16 – Peace, Justice and Strong Institutions</p> <p>SDG 17 – Partnerships for the Goals</p>

DESCRIPTION OF THE ACTIVITIES:	
00:00 – 00:02	<p>Introduction: State the aims (Slide 1 of PowerPoint)</p> <ul style="list-style-type: none"> - The aim of this session is to improve our understanding of the impact of climate change and the reason why we have to take urgent action to combat climate change and its impacts.
00:02 – 00:10	<p>Vocabulary Matching (Slide 2 of PowerPoint & handout Appendix 4)</p> <p>The UNFCC (United Nations Framework Convention) on climate change is a historic treaty, but it comes with a whole lot of jargon and scientific vocabulary.</p> <p>Do you know your basic Climate Change vocabulary?</p> <p>Ask learners to work in pairs/small groups.</p> <p>Instructions:</p> <ul style="list-style-type: none"> - Look at the vocabulary list and definitions. You have 3 minutes to match as many of the basic vocabulary terms to their definitions as you can. - Feedback and briefly clarify any definitions that are unknown <p>Preparation: have the vocabulary matching word list printed out, table ready and the answers to hand</p> <p>Climate change: Facts, Myths and Fake news (PowerPoint slide 3)</p> <p>Watch the video “Climate Change 101 with Bill Nye National Geographic”: https://www.youtube.com/watch?v=EtW2rrLHs08 (04:10 minutes)</p>
00:10 – 00:35	<p>In the video Bill Nye, the Science guy, explains what causes climate change, how it affects our planet, why we need to act promptly to mitigate its effects, and how each of us can contribute to a solution.</p> <p>Instructions</p> <ul style="list-style-type: none"> - Whilst watching video: Each learner must collect 3 facts and write them on post it notes to prepare the Myth Busting activity (next). You can show the video twice. <p>Plenary</p> <ul style="list-style-type: none"> - Students share the facts they have collected. Ask the students: How much did you know? What didn't you know? What you think is most important to know? <p>Myth Busting! (PowerPoint slide 4 & Appendix 5)</p> <p>Bill Nye is an American science communicator, television presenter, and mechanical engineer. He bases his talks on scientific evidence. However, when it comes to climate change myths and fake news are widely shared on social media.</p> <p>Instructions:</p> <ul style="list-style-type: none"> - Display Myth Busting grid on PowerPoint or as a handout. Learners can respond to the Myth Busting Grid as a class or in pairs/groups.
00:35 – 00:50	<p>Extension: Learners can create their own Myth Busting Grid</p> <p>It can either be a common one or let your learners personalise the Grid. Invite them to take it home, ask their parents, grandparents, friends and neighbours to answer the T/F statements and to share the result again during the next class.</p> <p> Share your Myth Busting Grid on the WtGW project platform or on social media using @GoalWales #wtgw #climateaction #sdg13</p>
00:50 – 00:60	<p>The conclusion proposed for this lesson is “Change for climate change” (slide 5 of PowerPoint)</p> <ul style="list-style-type: none"> - Rationale for engagement and action for change – Quotes (read out) from latest UNFCC report (May 19) and briefly discuss. https://content.yudu.com/web/2y3n2/0A2y3n3/GEO6/html/index.html?origin=reader

ADAPTATION SUGGESTIONS FOR YOUNGER LEARNERS

Use the following video <https://www.youtube.com/watch?v=v8unGCTWUWI>

Spotlighting vocabulary (instead of Vocabulary Matching)

Learners watch the video for the first time. Each pair of learners have a vocabulary list in front of them. When they hear a word spoken in the video that matches one on their list, they give it a tick. The aim is to tick all the words on their list.

List: *Weather, Climate, Carbon Dioxide, CO2, Planet Earth, Atmosphere, Carbon Cycle, Greenhouse Effect, Greenhouse Gas, Energy, Fossil Fuels, Warmer, Temperature, Storms, Floods, Droughts*

Climate change: Facts, Myths and Fake news

The learners watch the video again and this time after watching it share their thoughts about the information the video is giving them and ask any questions that they need to gain clarity.

REFERENCES:

Quiz

<https://www.natgeokids.com/uk/discover/geography/general-geography/what-is-climate-change/>

<https://www.earthday.org/climate-change-quiz/>

Fairtrade

<http://www.fairtrade.org.uk/schools>

The 'Myth Busting' activity was inspired by <https://www.wwf.org.uk/updates/10-myths-about-climate-change>

Appendix 4 - What on earth do we know? Vocabulary matching Activity

The UNFCC (United Nations Framework Convention) on Climate Change is a historic treaty, but it comes with a whole lot of jargon and scientific vocabulary. Do you know your basics?

Work as a group/pair. You have 3 minutes to match as many of these basic terms to their definitions as you can.

1	The process in which gases in the atmosphere trap the sun's heat
2	The types of gases that trap the sun's warmth in the atmosphere
3	A greenhouse gas with the chemical name CO ₂
4	When the average temperature on Earth is getting hotter
5	The scientific word for 'air'
6	Greenhouse gases caused by human activity.
7	A system of plants and animals living together
8	When a type of plant or animal disappears completely
9	Being able to anticipate, prepare for and respond to hazardous climate events
10	Something that people do or cause to happen
11	The lands, forests, energy sources and minerals existing naturally that can be used by people
12	A natural fuel such as gas or coal, formed in the geological past from the remains of living things
13	When fertile land become desert, typically as a result of drought or deforestation
14	The amount of CO ₂ released into the atmosphere as a result of an individual, organisation or community
15	2016 Paris Agreement
16	The act of reducing how harmful something is

Ecosystem	Natural resources	Mitigation	Global warming
Greenhouse effect	Greenhouse gases	Desertification	A global treaty to fight climate change
Emissions	Atmosphere	Carbon dioxide	Fossil fuels
Carbon footprint	Human activity	Climate resilience	Extinction

Once you have completed the activity, check your answers using the table overleaf.

Vocabulary matching answers

1.	The process in which gases in the atmosphere trap the sun's heat	Greenhouse effect
2.	The types of gases that trap the sun's warmth in the atmosphere	Greenhouse gases
3.	A greenhouse gas with the chemical name CO ₂	Carbon dioxide
4.	When the average temperature on Earth is getting hotter	Global warming
5.	The scientific word for 'air'	Atmosphere
6.	Greenhouse gases caused by human activity.	Emissions
7.	A system of plants and animals living together	Ecosystem
8.	When a type of plant or animal disappears completely	Extinction
9.	Being able to anticipate, prepare for and respond to hazardous climate events	Climate resilience
10.	Something that people do or cause to happen	Human activity
11.	The lands, forests, energy sources and minerals existing naturally that can be used by people	Natural resources
12.	A natural fuel such as gas or coal, formed in the geological past from the remains of living things	Fossil fuels
13.	When fertile land become desert, typically as a result of drought or deforestation	Desertification
14.	The amount of CO ₂ released into the atmosphere as a result of an individual, organisation or community	Carbon footprint
15.	2016 Paris Agreement	A global treaty to fight climate change
16.	The act of reducing how harmful something is	Mitigation

If you have enjoyed this activity and would like to test your knowledge even further, try this quiz from Oxfam GB and test your 'climate consciousness'.

<https://www.oxfam.org.uk/education/resources/climate-change-quiz>

Appendix 5

Myth Busting What they Say about Climate Change – True? Or False?			
Wasting less food is a way to reduce greenhouse gas emissions	Scientists cannot reach an agreement that climate change is real and caused by humans	The average global temperature rise since 1880 is 5 degrees Fahrenheit	It's a good idea to ask the trees about climate change
The USA emits the most CO2	The actions of animals contribute towards to climate change	A cup of tea will never taste the same because of climate change	Polar bears have been skating on thin ice since 1979
Buying Fairtrade goods can help combat climate change	Using Drive Thru restaurant services are better for the environment as it is quicker	Knitting is good for the planet	True False

Myth Busting! Climate change – Separating the Facts from the Fiction

Wasting less food is a way to reduce greenhouse gas emissions.	T	More than a third of food produced globally never makes it to the table. Some of this wasted food spoils in transit, while consumers throw some of this food out. During the production, harvesting, transporting, and packaging of the wasted food, more than 3.3 billion metric tons of carbon dioxide is emitted.
Scientists cannot reach an agreement that climate change is real and caused by humans.	F	97 percent (or more) of climate scientists agree that climate change is likely due to human activity. Nearly 200 scientific organizations across the globe have issued statements that publicly endorse this view.
The USA emits the most CO2	F	According to the EPA , China is currently the top emitter of carbon dioxide, accounting for 30% of global carbon emissions. The United States ranks as the second top emitter at 15%.
The average global temperature rises since 1880 is 5 degrees Fahrenheit	F	The average global temperature has risen by 1.69 degrees F (0.94 degrees C) since the twentieth century with more significant warming toward the poles than in the equatorial region.
The actions of animals contribute to Climate Change	T	Believe it or not, cows' eating habits contribute towards greenhouse gases. Just like us, when cows eat, methane gas builds up in their digestive system and is released. Imagine that there are almost 1.5 billion cows releasing all that gas into the atmosphere, it sure adds up!
Our cup of tea will never taste the same because of Climate change	T	We love a good cuppa in the UK, (around 165 million cups of the stuff every day!), but we probably take for granted just how much work goes into growing our tea. Environmental conditions can affect the flavour and quality plus it needs a very specific rainfall to grow. In Kenya, climate change is making rainfall patterns less and less predictable. Often there will be droughts followed by huge amounts rain, which makes it very difficult to grow tea.
Buying Fairtrade goods can help combat climate change	T	Buying Fairtrade products can help make sure a farmer is paid a fair wage. This means they can cover their costs, earn enough money to have a decent standard of living, and invest in their farms to keep their crop healthy, without needing to resort to harmful methods of farming such as pesticide spraying which can further damage the environment and those who work there.
Using Drive Thru restaurant services are better for the environment as they are quicker	F	Stay out of the drive thru! If you go to a fast-food place, ask your driver to park the car and let you walk inside, rather than sitting in a line of cars with the engine running and polluting. Look into the credentials of any fast food outlets you visit – how environmentally friendly are they? What action are they taking to mitigate climate change?
It's a good idea to ask the trees about climate change	T	Because trees are sensitive to local climate conditions, such as rain and temperature, they give scientists some information about that area's local climate in the past. For example, tree rings usually grow wider in warm, wet years and they are thinner in years when it is cold and dry. If the tree has experienced stressful conditions, such as a drought, the tree might hardly grow at all in those years.
Polar bears have been skating on thin ice since 1979	T	Information from NASA's Earth satellites shows us that every summer, some Arctic ice melts and shrinks, getting smallest by September. Then, when winter comes, the ice grows again. But since 1979, the September ice has been getting smaller and smaller and thinner and thinner. So, just a small amount of warming can have a huge effect over several years.
Knitting is good for the planet	T	Having a few extra woollies in our wardrobe means that we can turn down the thermostat on the heating when it's cold. Sweaters, blankets, and socks are good for you and better for the planet.



LESSON PLAN 1

THE HUMAN DIMENSION OF CLIMATE CHANGE

Flooded Houston streets and boats with people. Texas, USA

TITLE:	WHAT ON EARTH IS GOING ON?
AGE GROUP	10-18 years old
ESTIMATED DURATION:	2 hours for implementation
MATERIALS:	Appendix 6 to be printed. Appendices 7 and 8
ROOM REQUIREMENTS:	Movable chairs and tables and space to work in groups.
OBJECTIVES:	<ul style="list-style-type: none"> - To gain a better understanding of the humanitarian cost of climate change - To explore capacity and resilience of countries to respond - To build empathy - To understand the reason for action
GCE Main Competences developed	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Systems thinking competencies <input checked="" type="checkbox"/> Anticipatory competency <input checked="" type="checkbox"/> Normative competency <input checked="" type="checkbox"/> Strategic competency <input checked="" type="checkbox"/> Collaboration competency <input checked="" type="checkbox"/> Critical thinking competency <input checked="" type="checkbox"/> Self-awareness competency <input checked="" type="checkbox"/> Integrated problem-solving competency
DISCIPLINES	Geography, Science, Religious Studies, Art and Design and Personal Social & Health Education
SDGs involved	SDG 4 – Quality Education SDG 6 – Clean water and Sanitation SDG 13 – Climate Action SDG 16 – Peace, Justice and Strong Institutions SDG 17 – Partnerships for the Goals

DESCRIPTION OF THE ACTIVITIES:

00:00 – 00:20	<p>What on earth is going on? The Humanitarian Cost (slides 2 & 3 of PowerPoint)</p> <ul style="list-style-type: none">- This activity explores the different levels of resilience to recent extreme weather disasters, between a developed country - USA and the less developed countries of Mozambique, Malawi & Zimbabwe <p>Part 1 Resilience</p> <p>Natural disasters frequently occur across the world, affecting both developed and developing countries. However, some countries are more vulnerable than others.</p>
00:20 – 00:60	<p>How do natural disasters affect rich and poor countries differently?</p> <p>Instruction</p> <ul style="list-style-type: none">- Look at the USA image on Slide 2 and the Cyclone Idai image on Slide 3 of the PowerPoint and respond to the key question: “After the floods, what do you think happened here during the next 24 hours?” <p>For example:</p> <ul style="list-style-type: none">- Who responded?- How did they respond?- Where did the people go?- Did they have insurance options?- What services were available to them? <p>Further exploration: https://prezi.com/kwzmnisbz4ip/how-do-natural-disasters-affect-rich-vs-poor-countries-diff/</p>
00:60 – 00:80	<p>Part 2 Resilience and Response - In Their Shoes- Building empathy -- Agency and stakeholder</p> <p>Cyclone Idai hit Mozambique, Malawi and Zimbabwe between the 14 – 21 March 2019. As a result of this devastating event, these people’s lives were changed forever. Some of the people were working for response agencies and some were residents of the counties. This activity explores the direct and personal impact of extreme weather disasters on all involved.</p> <p>Instruction:</p> <ul style="list-style-type: none">- Watch the video about the impact of Cyclone “Idai Cyclone as it leaves Mozambique desperate and submerged” https://www.youtube.com/watch?v=TVJdW-qDJ5o (02:27 minutes)- Respond using Appendix 6 Empathy Matrix (PowerPoint slide 4)- Read about different people’s experiences of this disaster. People who lived there and people who worked for the emergency services. Now think about how it would be if you were in one of these people’s shoes during this time. Imagine the range of emotions you would have.- Use the Empathy Matrix model. Write down what you would DO, THINK and FEEL. (NB. This could also be done as a role play) <p>Preparation: Have video ready and text regarding the different people’s experiences available to read. Have paper for learners to draw Empathy Matrix and write their responses</p> <p>Plenary: Highlight and discuss the stark differences between developed world and richer countries when it comes to disaster relief resilience and response</p> <p>Part 3 Climate Change Migration - Climate change is forcing people from across the world, from their homes and sometimes countries.</p> <p>Instructions: Option 1: PowerPoint slide 6</p> <p>https://storymaps.esri.com/stories/2017/climate-migrants/index.html</p> <ul style="list-style-type: none">- Visit this website for a more detailed exploration of climate migrants. The ESRI story map on climate refugees does a phenomenal job sampling different locations in the world that experience migration effects as a result of climate change. <p>Option 2: PowerPoint slides 7 -11</p> <ul style="list-style-type: none">- The images are taken from the website and tell a more simplified version of the story. The teachers can look through the slides with their learners and give them opportunities to discuss their reactions. It is important for them to realise that the science behind climate change is powerful and concerning but that the stories behind the human dimension of climate change are equally as powerful and concerning.

00:80 – 00:100	<p>According to statistics published by the Internal Displacement Monitoring Centre, every year since 2008, an average of 26.4 million persons around the world have been forcibly displaced by floods, windstorms, earthquakes or droughts. This is equivalent to one person being displaced every second. Depending on the frequency and scale of the major natural disasters occurring, there are significant fluctuations in the total number of displaced people from one year to the next, yet the trend over recent decades has been on the rise. Many find refuge within their own country, but some are forced to go abroad.</p>
00:100 – 00:120	<p>With climate change, the number of ‘climate refugees’ will rise in the future. So far, the national and international response to this challenge has been limited, and protection for the people affected remains inadequate. What adds further to the gap in the protection of such people – who are often described as ‘climate refugees’ – is that there is neither a clear definition for this category of people, nor are they covered by the 1951 Refugee Convention. The latter extends only to people who have a well-founded fear of being persecuted because of their race, religion, nationality, membership of a particular social group or political opinion, and are unable or unwilling to seek protection from their home countries. While the EU has so far not recognised climate refugees formally, it has expressed growing concern and has taken action to support and develop resilience in the countries potentially affected by climate-related stress.</p> <p>Option 3:</p> <ul style="list-style-type: none"> - Use the PowerPoint Presentation or the story map created by the ESRI story maps team to answer/discuss the questions on the accompanying worksheet about climate hazards and the resulting patterns of migration Appendix 7 <p>NB. A more advanced version of the quiz is available at http://www.thehumanimprint.com/wp-content/uploads/2017/01/Climate-Migrant-Worksheet.pdf</p> <p>Preparation: Students need to have access to the internet if they are to view the story map. Copies of the worksheets also need to be made available</p> <p>End with this video https://www.youtube.com/watch?v=zuc38-Q6TBs&t=397s (08:10 minutes) “Table for nine billion: promoting Europe’s role in growing food and climate justice worldwide” and with a reflection: has it already happened to us? When? What are the consequences? Invite students to share personal experiences and stories they know.</p> <p>Optional activities:</p> <p>Case studies: Exploring the impact and real-life consequences in more detail.</p> <p>Appendix 8 is an example of the impact and consequences of a devastating drought in the Southern African Kingdom of Lesotho. Read it and complete the consequences grid</p> <p>Now think about how climate change may have or is having an impact on the human dimension of your city/community. For example, in October 2018 Carmarthenshire was hit by the worst floods in over 30 years</p> <ul style="list-style-type: none"> 🗣️ Tell us how climate change may have, or is having, an impact on the human dimension of your city/community. Share on the WtGW platform or on social media using @GoalWales #wtgw #climateaction #sdg13 to connect to other schools in your region and around Europe. Write a case study from the perspective of someone in your community 🗣️ Share your Myth Busting Grid on the WtGW platform and share on the WtGW platform or on social media using @GoalWales #wtgw #climateaction #sdg13 <p>1 in 6 people in Wales are living or working in an area at risk of flooding and with extreme flood events becoming more frequent, Natural Resources Wales is working with communities, businesses and individuals to help them take practical actions before, during and after a flood. Check their maps to see how your area could be affected. How could you prepare for a serious flooding incident? Would you know how to respond?</p> <p>Check out these resources:</p> <p>https://naturalresources.wales/guidance-and-advice/business-sectors/education-learning-and-skills/looking-for-learning-resources/learning-resources-search-by-topic/flooding/?lang=en</p> <p>Welsh version on https://naturalresources.wales/guidance-and-advice/business-sectors/education-learning-and-skills/looking-for-learning-resources/learning-resources-search-by-topic/flooding/?lang=cy</p> <p>You can now move on to looking at the environmental and/or economic dimension of climate change or go straight to the final compulsory lesson on taking action.</p>

ADAPTATION SUGGESTIONS FOR YOUNGER LEARNERS

Picture Comparison

- Show the two pictures of Hurricane Florence and Cyclone Idai (or any other two comparative photos of extreme weather disasters). Ask the learners a) to describe what they can see and b) to name similarities and differences between the two photos
- Give the learners some facts about each event and ask them to say which country's disaster the fact was linked to

Empathy building

- Give a character description from Appendix to a PAIR of learners to work together to find adjectives and phrases to describe how that person would FEEL (only)

Reflection on migration

- Reflective discussion on how they would feel if they had to leave their home

REFERENCES:

The activity "What on earth is going on?" is inspired by:

<https://www.oxfam.org.uk/education/resources/cyclone-idai>

The activity in Annex 7 was inspired by:

<http://www.ls.undp.org/content/lesotho/en/home/projects/>

[http://www.europarl.europa.eu/RegData/etudes/BRIE/2018/621893/EPRS_BRI\(2018\)621893_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2018/621893/EPRS_BRI(2018)621893_EN.pdf)

Growing food and climate justice worldwide

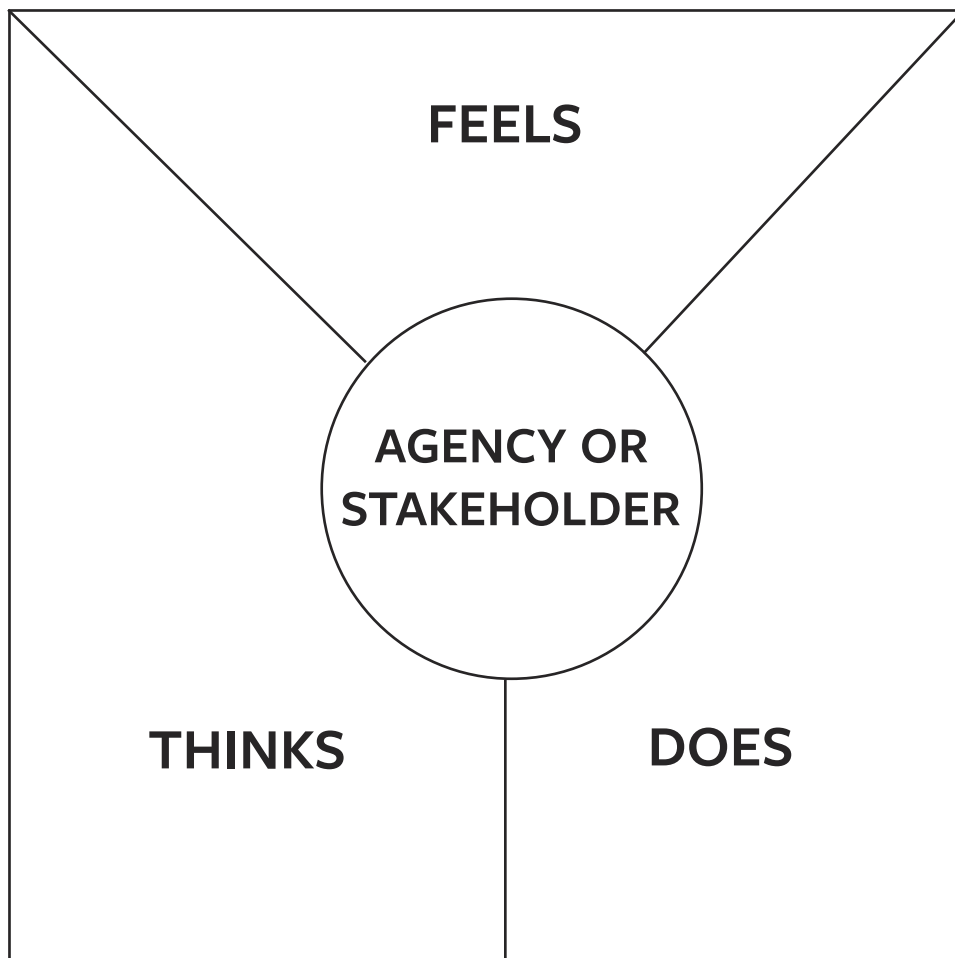
<https://foodfirst.org/publication/agriculture-the-next-battleground-for-climate-justice/>

Appendix 5 - Empathy Building (In their shoes...)

Cyclone Idai hit Mozambique, Malawi and Zimbabwe between 14 – 21 March 2019. As a result of this devastating event, these people’s lives were changed forever. Some of the people were working for response agencies and some were residents.

<p>Lucy: You have arrived at a camp for displaced people in southern Malawi. You are 17-years old and you gave birth after walking 12 kilometres to escape flood waters. (Stakeholder)</p>	<p>Clara: You have been drinking from contaminated wells. in Beira, Mozambique. You are one of the first people to be diagnosed with cholera (Stakeholder)</p>
<p>Francine: You are a doctor working with Doctors Without Borders. You work in one of the aid camps. you help ensure that there is access to lifesaving healthcare for people in need. (Agency)</p>	<p>Tsepo: You are a 14-year-old boy rescued from a boarding school in Zimbabwe. You have no idea if any of your family are still alive. All power and communication lines have been destroyed. (Stakeholder)</p>
<p>Rhys: You are a disaster relief volunteer from Swansea. You are helping to distribute food rations and water filters by boat to areas cut off by flood water. (Agency)</p>	<p>Sugesh: You are a 30-year-old father. All your family died in the cyclone. You have a flat-bottomed boat and you are needed to help deliver rations and rescue people stranded by the floods. (Stakeholder)</p>

Think about how it would be if you were in one of these people’s shoes during this time. Imagine the range of emotions you would have. Use this Empathy Matrix. Write down what you would SAY, DO, THINK and FEEL.



Appendix 7 - Climate Migrants

Instructions: Use the story map created by the ESRI storymaps team to answer/discuss the following questions about climate hazards and the resulting patterns of migration

What is a Climate Migrant?

What are some examples of environmental threats that cause people to migrate?

What **two** coastal communities in Alaska have been forced to move due to a number of environmental threats.

How is the Kiribati nation located in the Pacific planning to deal with the rising sea levels?

Name **two** other locations in the Pacific that experience environmental threats

In India, the Ganges and Brahmaputra form the world's largest delta. Why is this area one of the most vulnerable on our planet?

What is the population in Dhaka now as a result of increased migration?

People in war torn Syria experienced a very long drought which started in 1997 and finished in...

Developed countries like the United States also face threats from rising sea levels. Name **two** regions in the USA that face this threat.

How are they in a better position to deal with the problem than less developed countries?

Appendix 8 - Case study and links to news reports

Case study: Climate Crisis – Who Suffers the Most?

The impact of the El Nino drought 2016 on one family in Lesotho

In December 2015, the Government of Lesotho declared a state of emergency due to the drought caused by El Nino which devastated crops and harvests in 2015 and 2016. The World Food Programme (WFP) launched an emergency operation which, in March 2016 which reached some 200,000 food-insecure people with cash assistance. Because of the El Nino drought, the poorest members of a community were the most vulnerable and suffered the most.

Read the story of Mrs Ramotobo. What are the consequences of the chain of events that happened to her and her family because of the drought?

Mrs. Ramotobo (83 yrs.) lives with her orphaned grandchildren in a village in the foothills of Maseru district. She has a small piece of land where she grows crops to sell and to feed the family.

The drought has destroyed the crops and without crops to generate an income the family have little food and little money. Her eldest son is a good farmer but he has had to leave the village. He now lives and works in neighbouring South Africa where there are jobs. By migrating across the border, he can earn money to send home to the family. Many of the families in this village and across Lesotho are in a similar situation. This means that all the duties of taking care of the home, caring for the family, caring for the land and caring for the animals become the sole responsibility of the women and children.



Mrs Ramotobo receives an old age pension. Before the drought, she had been using this to pay for her oldest grandchild to attend school, as secondary education is not free in Lesotho. She will now have to use her pension to buy food. Her grandchild will no longer be able to attend school. Lesotho has a high dropout rate for secondary education under normal circumstances. With the additional stress that El Nino has brought, many families cannot afford to pay the fees and the long-term impact of increased drop rates is of significant concern.







To help her situation, Mrs Ramotobo was given money by the The World Food Programme. This cash assistance helped greatly and she was able to use the cash to create a more sustainable situation for her and her family.

The results of such a devastating natural disaster have far-reaching consequences. What do you think are the consequences of the chain of events that happened to Mrs Ramotobo and her family because of the drought?

Vulnerability to Climate Change Shocks

The impact of El Niño

El Niño caused by Climate change disrupted normal climate and weather patterns. The result was a serious drought from 2015 - 2016

Chain of events as a result of El Nino		Consequences
Drought		
Food reserves are finished		
Food has to be bought and prices rise		
The poorest struggle to buy food		
Poverty and hunger is a day to day issue		
Humanitarian aid is needed e.g from the World Food Programme (WFP)		

How do you think Mrs Ramotobo improved her situation and made it more sustainable with the help of the cash assistance from the WFP?

News Links:

Mozambique Cyclone Idai and Kenneth <https://globalnews.ca/news/5236799/mozambique-children-cyclones/>

India Cyclone Fani <https://www.bbc.co.uk/news/world-asia-48160096>

USA <https://www.nytimes.com/2019/03/21/climate/climate-change-flooding.html>

Lesotho <http://ls.one.un.org/content/unct/lesotho/en/home/humanitarian-efforts.html>


<https://www.theguardian.com/environment/ng-interactive/2018/dec/21/deadly-weather-the-human-cost-of-2018s-climate-disasters-visual-guide>



LESSON PLAN 2: THE ENVIRONMENTAL DIMENSION OF CLIMATE CHANGE

TITLE:	CLIMATE CHANGE: IMPACT ON OUR NATURAL ENVIRONMENT
AGE GROUP	10-14 years old
ESTIMATED DURATION:	Approx. 2 hours for implementation plus time for research and to go outside to make observations
MATERIALS:	Environmental Dimension PowerPoint Presentation, Pc, video projector, speakers or an interactive whiteboard. iPads/tablets, markers, A3 or flip chart paper
PREPARATION:	Appendices 9, 11, 12a and 12 b will need printing on paper or card as indicated. Appendix 10 can be shared on screen. Sets of cards, tables etc. linked to online resources will also need printing and cutting out beforehand.
ROOM REQUIREMENTS:	Movable chairs and tables and space to work in groups. Outdoor learning where possible.
OBJECTIVES:	<ul style="list-style-type: none"> • To develop knowledge & understanding of how climate change is impacting on different natural environments • To learn about the vital role played by trees and forests • To understand environmental interdependence • To understand how wildlife and plant life locally and globally are affected and the threat posed by further global warming • To consider actions to mitigate climate change
GCE Main Competences developed	<input checked="" type="checkbox"/> Systems thinking competencies <input checked="" type="checkbox"/> Anticipatory competency <input checked="" type="checkbox"/> Normative competency <input checked="" type="checkbox"/> Strategic competency <input checked="" type="checkbox"/> Collaboration competency <input checked="" type="checkbox"/> Critical thinking competency <input checked="" type="checkbox"/> Self-awareness competency <input checked="" type="checkbox"/> Integrated problem-solving competency
DISCIPLINES	Geography, Science, PSE, Design and Technology
SDGs involved	SDG 13 - Climate Action SDG 14 - Life below Water SDG 15 - Life on Land SDG 17 - Partnerships for the Goals

DESCRIPTION OF THE ACTIVITIES:

00:00 – 00:05	<p>Introduction: How is climate change affecting natural environments?</p> <p>Ask pupils to work in pairs to come up with as many different examples of natural environments as they can. Write these up on the board.</p> <p>Which can be found in Wales? What about other natural environments that we don't have here? How do they think climate change is affecting these?</p> <p>Present slides 2 – 6 of the PowerPoint. N.B. there are notes below most slides on this PowerPoint to assist with delivery.</p>
00:05 – 00:15	<p>Match up the habitats to the impacts</p> <p>To consolidate their learning and gain information about other habitats, ask learners to work in small groups and match up the habitat cards with the impact cards (Slide 7 – Appendix 9).</p> <p>Go through the answers:</p> <ul style="list-style-type: none">Coral reefs - 2Polar regions - 1Wetlands - 3Desert - 6Forest - 5Grasslands - 4 <p>What new information have they learnt from this activity? Has anything surprised them?</p> <p>N.B. Clarify any vocabulary issues, ensuring learners understand the meaning of the term “carbon sink”. If there's confusion about this, show this 2 min video: https://www.youtube.com/watch?v=OoW2PlvMpZs</p>
00:15 – 00:25	<p>The importance of trees and forests</p> <p>Show slide 8 and ask learners to guess what the objects have in common.</p> <p>All of these derive from trees grown on 4 continents as shown on slide 9. Stress how we depend on other countries for many everyday products we use without thinking about their origins.</p> <p>What other products can learners come up with which we get from trees? How about other benefits?</p> <p>Divide learners into groups and give each group a large piece of paper. Ask them to draw a large tree in the middle and write the products on the tree and other benefits around it. See Slide 10. Discuss the results.</p> <p>You will need to prepare sets of cards copied from this link before giving each group a set: https://cdn.naturalresources.wales/media/688161/resource-cards-why-trees-are-important.pdf</p> <p>Welsh version available on https://cdn.naturalresources.wales/media/688162/cardiau-adnoddau-pam-fod-coed-yn-bwysig.pdf</p>
00:25 – 00:45	<p>Ask learners to rank the cards as a “diamond 9” with the most important card at the top, two cards in 2nd row, three cards in 3rd row (medium importance), two cards in 4th row and their lowest importance card at the bottom and try to get consensus as a group. Discuss results and then ask pupils which benefits were missing from their tree papers. N.B. Stress the two benefits they may not have thought of i.e. how trees can mitigate flooding and soil erosion, and discuss the relevance to climate action. Get them to add these. Display the papers in the classroom</p> <p> Take a picture of the tree papers and share on the WtGW platform or on social media using @GoalWales #wtgw #climateaction #sdg13</p> <p>Environmental interdependence</p> <p>Ask learners to come up with names of trees growing locally then show slide 11 featuring the oak, which itself provides a habitat for more species than any other tree in the UK. How might the oak depend on some of the organisms it supports? Possible answers include dispersal. Jays and squirrels for example take away acorns to store, those they don't eat grow into new trees in new places.</p> <p>Do learners know what trees are growing in their school grounds? If not, take the opportunity to go out, take a look, research species and report back. Show slide 12 and then play the African Rainforest Eco System string game to explore interdependence in a different environment and context. You will need to prepare sets of cards copied from page 18 of this link https://cdn.sizeofwales.org.uk/wp-content/uploads/2018/04/30143525/A-fresh-look-at-Tropical-Rainforests.pdf</p>

DESCRIPTION OF THE ACTIVITIES (CONT):

00:45 – 01:05	<p>Give each learner one of the 20 cards and get them standing in a circle. Each in turn reads out their description of either a rainforest species or a physical factor. Then give a ball of string to one pupil and ask them to hold one end, of choose another species/physical factor they are connected to and throw the ball of string to them. That learner does the same and so do others until a string web is formed.</p> <p>Suggest a change to the forest e.g. a drought, a forest fire, trees being felled. Ask learners with tree descriptions to pull on the string, any other learners feeling that pull should also pull.</p> <p>N.B. There is a simpler version of this game using only 8 cards here https://cdn.sizeofwales.org.uk/wp-content/uploads/2018/04/30143509/3-Spiders-web.pdf. Welsh version is on https://cdn.sizeofwales.org.uk/wp-content/uploads/2017/01/30145713/3-Spiders-Web-CYM.pdf</p> <p>Our Planet – How to save our forests</p> <p>Before watching this WWF video “Our planet: how to save our forests?” narrated by David Attenborough https://www.youtube.com/watch?v=lg9Tfc_hNsE (7 min. 45 sec.), discuss memories and feelings pupils associate with trees. What would Carmarthenshire look like with no trees or hedgerows? How would this impact on wellbeing?</p> <p>Make enough copies of the statements – appendix 10 - so pupils have one between three. Ask them to read through, then watch the video and decide which are true and which are false and to correct any that are false. Slide 13.</p> <p>After going through the answers shown on slide 14, ask if learners thought this was a pessimistic or optimistic video.</p>
01:05 – 01:30	<p>Ask learners to work in small groups. Give out copies of the table – appendix 11 on A3 (Slide 15) - which contains the solutions proposed in the video. Ask learners if they can come up with any other solutions themselves then do some research to complete the table before reporting back to the class.</p> <p>Point out that trees grown in tropical regions grow faster and so can help mitigate global warming more effectively.</p> <p>Show slides 16 and 17 if learners have not proposed the solutions featured on these, namely opting for FSC products and using Ecosia as a search engine.</p> <p>Mitigating the impact of climate change – what role is Wales playing?</p> <p>Ask learners to guess why Wales could be seen as the first nation that contributed to climate change. Then show slide 18.</p> <p>Point out that some organisations in Wales are playing a positive role and supporting those living in countries already at the sharp end of climate change to adapt as well to help mitigate further global warming. Some of these organisations are featured on slide 19. Learners should read the article on http://www.hubcymru.org/hub/newsarchive16-17.html</p> <p>Welsh version available on http://www.hubcymruafrica.cymru/hub/archifnewyddion16-17.html</p> <p>How are these organisations supporting people in sub-Saharan Africa to help mitigate climate change for the benefit of all of us?</p> <p>Ask learners if they know of other relevant organisations. Which organisation they would prefer to invite to school and why.</p> <p>Follow this up by inviting the relevant speaker to visit your school N.B. most will come free of charge but check this first!</p>

DESCRIPTION OF THE ACTIVITIES (CONT):

01:30 – 01:40	Impact of climate change on wildlife and plants Ask learners if they have heard the term “mass extinction”. What species do they think are threatened and where (refer back to first activities of this lesson plan)? Do they think it matters if a species vanishes? Why/Why not? Then go through slides 20 and 21. Give out the fact sheet on 10 species affected by Climate Change- appendix 12 - for learners to read through. Divide into groups and give out sets of text and picture cards. Pupils should shuffle cards then place them face-down in a grid of four cards by five cards. Pupils take it in turns to turn over two cards and see if they match – they must match a text card with the relevant picture card. If they match, the pupil keeps the cards and gets another go. If they don’t, turn the cards back over, keeping them in the same place and let another pupil have a go. The winner is the person who collects the most cards. Source https://www.tes.com/teaching-resource/climate-change-6386683 Answers are on Slide 22. Are there any species here that are new to them or that they were unaware that they were threatened by climate change?
01.40 – 02.00	What about here in Wales? Do learners think any species here are under threat of extinction? Go through slides 23 and 24 which focus on the importance of pollinators such as bees. Slide 25 suggests different actions learners and their schools could take. See if learners can come up with additional actions such as volunteering. Ask all to do the last activity, namely choose a species affected by climate change, and raise awareness and encourage suitable actions by designing a digital flier. This could be done individually or in groups and is suggested as a homework rather than a class-based task. Finally show slide 26 and stress that the greatest impact we could have on climate change would be to reduce our own environmental footprint. N.B. Ideas for activities on this are contained in the final compulsory lesson plan in this pack.

ADDITIONAL ACTIVITIES AND IDEAS

West Africa Palm Oil Plantation Role Play

Explore the contentious issue of palm oil plantations and their contribution to deforestation and climate change with this role play <https://cdn.sizeofwales.org.uk/wp-content/uploads/2018/04/30143512/4-West-Africa-Palm-Oil-Plantation-Role-Play.pdf> from Size of Wales. Learners take on the role of characters who may be for or against a palm oil plantation in Cameroon and debate whether or not palm oil should be grown in the area. N.B. This is marked as suitable for KS2 but would work for KS3 too. Welsh version available on <https://cdn.sizeofwales.org.uk/wp-content/uploads/2018/04/30143536/4-West-Africa-Palm-Oil-Role-Play-CYM.pdf>

Visualise your carbon emissions in terms of trees!

How much carbon can a tree store? Is it less, as much as, or more carbon as you are emitting through your actions over the period of one year? Work out your carbon footprint for one year by using this chart:

<https://cdn.naturalresources.wales/media/687150/eng-worksheet-carbon-footprint.pdf>

these cards <https://cdn.naturalresources.wales/media/687189/eng-resource-cards-carbon-equivalents.pdf>

and this calculator <https://cdn.naturalresources.wales/media/687190/eng-worksheet-carbon-storage-calculator.pdf>

Welsh versions available on <https://cdn.naturalresources.wales/media/687151/cym-taflen-waith-worksheet-ol-troed-carbon.pdf>

and <https://cdn.naturalresources.wales/media/687187/cym-cardiau-adnoddau-cywerthoedd-carbon.pdf> and <https://cdn.naturalresources.wales/media/687188/cym-taflen-waith-cyfrifydd-storio-carbon.pdf>

Find out the circumference of a tree which stores the equivalent amount of carbon by consulting the graph on page 3 of the worksheet on the above link.

Go outside if possible and find a tree which has a similar circumference at chest height (tip – you'll need to be in an area with some trees that are over 150cm in circumference).

Now find out if the tree is a broadleaf tree (oak, ash, beech etc) or a conifer (pine, larch etc). Work out the age of the tree by dividing the circumference by 2 for a broadleaf tree and by 3 for a conifer.

How old is "your" tree? The equivalent of the carbon you cause to be emitted in just one year is contained in that one tree. How many trees will be needed to be planted to absorb your carbon emissions at the present rate over your life time?

Trees that refuse to give up!

To further explore the resilience of trees, look at these amazing photos of trees growing in seemingly impossible places <https://www.boredpanda.com/trees-refuse-to-give-up/>

These trees have changed their ways to adapt to new circumstances – can we also change ours in the face of climate change?

ADAPTATION SUGGESTIONS FOR YOUNGER LEARNERS

Use the following video <https://www.youtube.com/watch?v=9h7P8gWpolQ> (2 min 13) to show how global warming leads to changes in vegetation, forcing many animal species to migrate and look for cooler habitats.

African Rainforest Eco System string game – play the simpler version of this game using only 8 cards to be found on <https://cdn.sizeofwales.org.uk/wp-content/uploads/2018/04/30143509/3-Spiders-web.pdf>

REFERENCES:	https://www.iucn.org/about http://climatechangeconnection.org https://www.worldwildlife.org/habitats/ https://cdn.naturalresources.wales http://www.carbonlink.org/ https://www.ecosia.org/ https://sizeofwales.org.uk/ http://www.hubcymru.org/hub/about.html https://www.wildscreen.org/arkive https://www.wildlifetrusts.org/actions/how-help-wildlife-school
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Appendix 9 - Match the impact description cards to the relevant natural environment cards

1. This environment continues to warm two to three times faster than the average for the rest of the world. Summer ice cover is shrinking, and permafrost is melting. Animals such as whales are losing their main food supply and others such as penguins are threatened.	2. Although this environment covers less than 1% of ocean floor, it provides food and shelter to over 1/3 of all marine fish! It is becoming weakened due to rising sea temperatures and the acidification of the ocean caused by increased carbon dioxide reacting with salt water.
3. More frequent floods and contamination with saltwater from rising sea levels affect this habitat. These are drowning trees such as mangroves while droughts are contributing to the destruction of estuaries and marshlands.	6. You might not think many people live here but in fact 500 million do! This environment is expanding in area but rising temperatures are making it increasingly hostile. Rainfall is becoming even scarcer here and dust storms are becoming more frequent.
5. Temperature rises in the summer months and the rise in carbon dioxide in the atmosphere mean that fires in here are occurring more frequently, spreading more rapidly and causing more destruction. Warmer winters mean that some pests are no longer killed off by frosts and can cause this environment to shrink further.	4. 25% of the earth was once covered in these however much has been developed into farmland now with a resultant decline in wildlife and plant species. Continued global warming and lack of rainfall could cause desertification of this environment.

Coral reefs	Polar regions	Wetlands
Desert	Forest	Grasslands

Appendix 10

Before you watch the video “Our planet: how to save our forests?”, read through the statements below. After watching the video, state whether they are true or false and correct the false ones.

1. We have already cleared 25% of the earth’s forests.

2. Trees are resilient, able to survive in unlikely places and recover from harsh weather conditions.

3. We are cutting down 10 million trees a year.

4. We have harmed the balance between the forest predators and the plant eaters making the trees more vulnerable.

5. Trees are vital as they store oxygen from the atmosphere and store it in their trunks, roots and in the soil.

6. Destroying forests to make more room to farm cattle and grow crops like soya releases dangerous amounts of carbon which are contributing to climate change.

7. There are no easy solutions to the problems caused by deforestation.

Appendix 11

In groups, discuss the solutions proposed in the video “Our Planet: how to save our forests”. See if you can add any of your own, do some research, and complete the table.

Solution proposed	How effective would this be?	How easy would this be to put into practice?	What can we do as individuals to help with this?	What could we do as a school to support this?	Who else could we involve/ask for support?
Protect ancient forests					
Use forests more carefully					
Plant more trees locally					
Plant more trees in tropical regions					
Make innovative use of technology					
Your idea(s)					

Appendix 12a - Species and Climate Change Factsheet

Leatherback turtle

The sex of sea turtle hatchlings is determined by the temperature at which the eggs are incubated in the nest. Cooler nests produce more males, and warmer nests produce more females. As climate change leads to increasing temperatures, more of the nests will produce females, causing an imbalance in the number of male and female sea turtles in the population. Climate change can also lead to rising sea levels and an increase in the number of storms which can damage sea turtle nesting beaches.



North Atlantic right whale

Increases in sea temperature and changes in ocean currents due to climate change are likely to cause the planktonic prey of the North Atlantic right whale to move location or reduce in abundance. This could have potentially devastating consequences for this already highly endangered species.



Staghorn corals

Climate change is one of the greatest threats to coral reefs. A rise in sea temperature is causing an increase in coral bleaching. Coral bleaching is a process which results in coral being unable to obtain enough nutrients, so it begins to starve. Climate change is also increasing the acidity of the oceans, which affects the coral's ability to produce its skeleton, leaving the species vulnerable to disease.



Arctic fox

Climate change is altering the Arctic fox's habitat. Due to changes in the climate, new plants can now grow in the tundra where the Arctic fox lives. These new plants are changing the tundra habitat, making it unsuitable for the Arctic fox. This problem is made worse as the new habitat is allowing the red fox, a species which competes with the Arctic fox, to move northwards into the tundra.



Emperor penguin

Parts of the Antarctic Peninsula are warming up faster than anywhere else on the planet, and a temperature increase of just two degrees Celsius would result in some areas of this region becoming ice free. Emperor penguins rely on sea ice as a platform on which to breed, and without it this species would struggle to survive.



The declining sea ice cover is also lowering the availability of certain prey species, such as krill, which feed under the ice.

Clown fish

Clownfish are dependent on sea anemones for protection. Sea anemones are mainly found on coral reefs, which are declining due to climate change. A decrease in sea anemones will result in a decrease in the number of clownfish.



Koala

Koalas get most of their energy from feeding on eucalyptus leaves. Increasing carbon dioxide levels due to climate change can cause the nutritional value of these leaves to decrease, meaning that the koalas are not taking in the nutrients they require to survive.



With their thick skin and warm fur, koalas do not cope well in extreme heat, and may descend to the ground in search of water. This puts them at risk of being taken by a predator. Koalas are slow-moving tree-dwellers, and so an increase in the number of bushfires leaves them vulnerable.

Quiver tree

Climate change is leading to rising temperatures and a decrease in rainfall, which causes some species such as the quiver tree to suffer from drought stress. Some species can adapt by shifting their range and moving to more suitable areas, but the speed at which plants like the quiver tree are able to colonise new areas may not be fast enough to cope with the rapidly changing climate.



Golden toad

The extinction of the golden toad is thought to have been caused mainly by climate change and disease. Amphibians are sensitive to even small changes in temperature and moisture, so changes in climate can alter breeding behaviour and reproductive success.



Beluga whale











Climate change is altering patterns of human activity, which may have an indirect effect on the beluga whale. The extensive ice cover in the Arctic meant that many areas were once inaccessible to humans. However, as the ice cover declines, humans are now able to enter areas which were once refuges for belugas.



More vessels are now sailing through the Arctic, which increases the risk of belugas being hit by boats and being injured or killed. Noise pollution in the area may also negatively impact the communication and foraging abilities of this unusual species.

Appendix 12 b

Needs cutting into separate picture and text cards and shuffling giving each group of learners a set.

<p>Climate change could lead to an imbalance in the number of males and females in this species' population.</p>		<p>The planktonic prey of this species is moving location and reducing in abundance.</p>	
<p>Climate change is a big threat to this species, reducing its ability to obtain nutrients and produce its skeleton.</p>		<p>The main threat to this species is habitat alteration, as climate change is allowing new plants to grow in the tundra where it lives.</p>	
<p>The sea ice which this species needs in order to breed is at risk of disappearing.</p>		<p>Climate change is threatening the sea anemones upon which this species is dependant.</p>	
<p>Climate change can cause a decrease in the nutritional value of the eucalyptus leaves which form the bulk of this species' diet.</p>		<p>This species is slow to move to new areas, and so may not cope with the changing climate. The main threat to this species is drought stress.</p>	
<p>Climate change is thought to have played a role in this species' extinction.</p>		<p>The main threat to this species is the increase in human activity in its habitat as a result of climate change making the Arctic more accessible.</p>	



LESSON PLAN 3 – THE ECONOMIC DIMENSION OF CLIMATE CHANGE

TITLE:	CLIMATE CHANGE AND THE ECONOMIC DIMENSION
AGE GROUP	14-18 years old. N.B. Follow on activities are suitable for 11-18 year olds.
ESTIMATED DURATION:	2 hours for implementation
MATERIALS:	PowerPoint Presentation for this lesson plan, PC, video projector, speakers or an interactive whiteboard. iPads, post it notes, markers, flip chart paper, scissors, blue tack To be prepared in advance:
PREPARATION:	Print sufficient copies of Balance Scale on slide 4, Lesotho case study and questions on slide 9, and GDP prompt sheet on slide 11. For the follow on activities, access to computer, iPad with PowerPoint resource is essential.
ROOM REQUIREMENTS:	Preferably: Movable chairs and tables and space to work in groups.
OBJECTIVES:	<ul style="list-style-type: none"> • To understand how the current Climate Emergency is impacting the economy. • To understand what contributions Wales is making to Climate change mitigation from an economic perspective • Learners to find out and share what they need to do to ensure they have a prosperous & sustainable future
GCE Main Competences developed	<ul style="list-style-type: none"> ✓ Systems thinking competencies ✓ Anticipatory competency ✓ Normative competency ✓ Strategic competency ✓ Collaboration competency ✓ Critical thinking competency ✓ Self-awareness competency ✓ Integrated problem-solving competency
SDGs involved	All of the 17 SDGs

DESCRIPTION OF THE ACTIVITIES:	
00:00 – 00:05	<p>Introductory activity:</p> <p>Slide 1 - Introduce the field of Economics and the learning objectives of this series of activities. They can be taught in a linear way or selected in isolation. Slide 1 to 10 can be taught as a 2 hour lesson and then follow up activities done independently.</p>
00:05 – 00:15	<p>Slide 2 – Display and issue printed copies of the infographic - Are we ready for Climate Change? Taken from the European Environment Agency 2017.</p> <p>Issue small squares of coloured paper or post-it notes</p> <p>In pairs – analyse this infographic to recap on your previous learning... focus on the symbols (the terminology at the bottom may be too complex for some pupils), what do the symbols mean? Research & define any words/concepts you do not know and write them on the papers provided.</p>
00:15 – 00:30	<p>In groups - Make a new ‘balance scale display’ on the wall or flat surface with your new information</p> <p>More Able & Talented pupils – Act as Fact checkers - update the data at the bottom of the infographic</p>
00:35 – 00:45	<p>Slide 4 – Summarize the class findings and display with reference to the slide on economic issues</p> <p>📷 Take a picture of the display and share on the WtGW platform or on social media using @GoalWales #wtgw #climateaction #sdg13</p>
00:45 – 00:55	<p>Development</p> <p>Slides 5 and 6 – Introduce some of the economic solutions to the problems and issues raised in task 1</p> <p>Teacher to explain the slide briefly as introduction to the next sections. If pupils have iPad’s they can search for definitions quickly and feedback to the class whilst others write down what they think each solution entails on post-it notes. Build a reference display of difficult/new terminology</p>
00:55 – 01:05	<p>Slide 7 – What is the Green Climate Fund (GCF)?</p> <ul style="list-style-type: none"> • Read through the slide and • View the video by OECD – Smart Adaptations to Climate Change https://youtu.be/oshaiU7oHOo
1:05 – 1:15	<ul style="list-style-type: none"> • Discuss the examples shown and think about why so many countries have agreed to support the GCF.
1:15 – 1:30	<p>Share a case study from our twinned country, Lesotho to highlight the importance of international aid for adaptation & mitigation (see appendix). Split the text and each group to read and answer key questions provided on Slide 9.</p> <p>📷 Feedback to the whole class – video each groups response and share on the WtGW platform or on social media using @GoalWales #wtgw #climateaction #sdg13</p>
1:45 – 2:00	<p>Slide 10 – What happens if we do not act?</p> <p>Explain briefly what GDP (Gross Domestic Product) is and how it is measured – link back to how countries can access the GCF if they have a low GDP</p> <p>In pairs – list the potential impact on each part of our GDP if we do not adapt and mitigate Climate Change. See prompt sheet on Slide 11.</p> <p>MAT pupils can add the Brexit factor into their reflections.</p> <p>Feedback as plenary activity – pupils can present their findings to the class formally or informally using social media. NB. Follow on activities focus on the positive actions being taken.</p> <p>📷 Share on the WtGW platform or on social media using @GoalWales #wtgw #climateaction #sdg13</p>
30 mins	<p>Follow on activities:</p> <ol style="list-style-type: none"> 1. Looking at the Media – GDP & Co2 (Slide 12) <p>Ask half of the class to look at the video clip from the USA – the other half to focus on the UK information from WWF and the New Scientist.</p>

FOLLOW ON ACTIVITIES:

<p>30 – 45 mins</p>	<p>1. Looking at the Media – GDP & Co2 (Slide 12)</p> <p>Ask half of the class to look at the video clip from the USA – the other half to focus on the UK information from WWF and the New Scientist.</p> <p>Each pair to discuss, research and plan how they would question Trump or Boris on climate change if they were stuck in a lift with them!</p> <p>Think – Pair – Share with small group and then select the best examples to showcase & video.</p> <p>🗣️ Share on the WtGW platform or on social media using @GoalWales #wtgw #climateaction #sdg13</p>
<p>30 – 45 mins</p>	<p>2. What about the green, green grass of home? (Slide 13 - 15)</p> <p>Introduce our local context with this video from the WWF.</p> <p>Discuss how the Welsh Government has devolved power and introduce our key Assembly Members</p> <p>Can Wales be Net Zero GHG by 2050? Play the Pictionary game to elicit understanding about key concepts, use the BBC Climate Change Glossary to help you – Net Zero; Carbon Budget; Carbon Offset; Carbon Legacy etc. Share funny/difficult ones with the class and draw up a keyword glossary.</p> <p>🗣️ Share on the WtGW platform or on social media using @GoalWales #wtgw #climateaction #sdg13</p>
<p>30 – 45 mins</p>	<p>3. How would you spend the money? (Slide 16-17)</p> <p>Split the class into groups – each representing the sectors mentioned in Sophie Howe’s 10 point plan: transport; housing; renewables & land use/nature based solutions. Each group has a suggested budget and handout with research prompts (Slide 16) to discuss and prioritise spending on climate change mitigation solutions.</p>
<p>10 - 20 mins</p>	<p>More Able and Talented pupils extension task – look at the infographics for Carmarthenshire (Slides 18-20). The County Council is investing over £2.5million to make energy efficiencies across the county. Where would you start prioritising?</p> <p>Plenary - Re-address the weighing scale infographic from Activity 1 - can you change the balance? Adapt the display according or make a new Wales based infographic.</p> <p>🗣️ Share on the WtGW platform or on social media using @GoalWales #wtgw #climateaction #sdg13</p>
<p>1 - 2 hours</p>	<p>4. How does this affect me? Refer to slides 21-29</p> <p>Introduce the 7 Well Being Goals for Wales and how they encompass the wider SDGs in a more localised way. N.B. All the following links are contained in the PowerPoint.</p> <ul style="list-style-type: none"> • 5 min video for teacher context/older pupils • Young Persons guide • WCVA guide • 2018 progress report about Children’s Well Being <p>What is being done already in Carmarthenshire?</p> <p>Introduce the concept of the Youth Goal Convenor – in teams investigate examples of how Wales is trying to achieve the Well Being Goals – see handout per goal. Choose a digital form to share your findings and your thoughts.</p> <p>🗣️ Share your selected digital media outcomes as widely as possible including your WTGW Goal Keepers, the School Council, School Governors, PTA and the Future Generations Commissioner. Share on the WtGW platform or on social media using @GoalWales #wtgw #climateaction #sdg13</p>



FINAL COMPULSORY LESSON PLAN

BELFAST, NORTHERN IRELAND - DECEMBER 31: a mural promotes awareness of climate change on December 31, 2011 on the Falls Road in Belfast, Northern Ireland.

TITLE:	DON'T JUST SIT THERE!
AGE GROUP	10-18 years old
ESTIMATED DURATION:	1 hour for implementation. 15 minutes for preparation (printing and cutting out).
MATERIALS:	To be prepared in advance: technology for viewing videos, PowerPoint Presentation, Appendices
ROOM REQUIREMENTS:	Movable tables and chairs
OBJECTIVES:	<ul style="list-style-type: none"> ● To facilitate a learn-think-act approach to Climate Action ● To build knowledge and invite students to reflect critically ● To decide upon tangible actions that involve the students, the school and local community
GCE Main Competences developed	<ul style="list-style-type: none"> ✓ Systems thinking competencies ✓ Anticipatory competency ✓ Normative competency ✓ Strategic competency ✓ Collaboration competency ✓ Critical thinking competency ✓ Self-awareness competency ✓ Integrated problem-solving competency
SDGs involved	SDG 4 – Quality Education SDG 13 – Climate Action SDG 16 – Peace, Justice and Strong Institutions SDG 17 – Partnerships for the Goals

DESCRIPTION OF THE ACTIVITIES:

00:00 – 00:10

Climate action

Action is the only answer to climate change. We are all change makers who can act at different levels: individual, collective, local, global, changing our habits and putting pressure on governments. Why? Because we and the planet deserve a future.

Start this last activity with the video <https://www.youtube.com/watch?v=VFkQSGyeCWg&t=6s> (03:29 min) - "You Are Stealing Our Future": Greta Thunberg 15, the school strike activist condemns the "World's Inaction on Climate Change"

Greta started her movement "Fridays for Future" with a very powerful sentence: "Why should I be studying for a future that soon may be no more, when no one is doing anything to save that future?" Ask your students to discuss this statement. What do they think about it?

Reasons for Action

However, let's get deeper into the reasons why we should care about climate change. Write this question on the blackboard: "Why should I care?". Ask learners to explore reasons for action using a why why why chain – Appendix 13

00:10 – 00:30

Key Question: What if we do nothing? ~ (PowerPoint slide 2)

For example, think about Carmarthenshire and the impact of the 2018 floods. If nothing is done about climate change, flooding may become more extreme in the future. Use the Consequences Map from Appendix 14 to start thinking about the question. Learners can discuss in groups and respond using the 'Consequences Map'. Have paper ready for them to do this.

Measuring your impact on the environment

Explain this task in class but ask learners to do it for homework as they may need to get some information from parents/guardians. It is hard to tell how to reduce the impact we're having as individuals on the environment without a way to measure this. Use the WWF's footprint calculator <https://footprint.wwf.org.uk/#/> - an easy online questionnaire that will help you understand what your carbon footprint is, how it compares to the UK and world averages. It shows you how your habits are contributing to your footprint, helping you to understand where to prioritise your actions. It even gives you tips on what you can do to reduce your footprint to help you prioritise and target your efforts most effectively.

Having completed the task for homework, learners report back.

Work out the class average footprint – could they reduce it by this time next year? What would they need to do?

If you have a partner school in another country, ask a class there to calculate their average environmental footprint and compare results. Can classes collaborate and make suggestions to help reduce each other's average?

00:30 – 00:60

Sustainability performance – A School Audit for action (Slide 3)

Do the behaviours and attitudes in your school contribute to climate change? What does your school need to do to change for the better to limit the impact of climate change?

Make a plan to conduct a school Sustainability Performance Audit

- What's being done now?
- What do you think needs to be done?
- How is it going to be done and who will be involved?

Follow up: use the Eco Schools Environmental Review to help you with this process.

If your school has already completed one in the past, this is a good time to look at it again.

You can find one for secondary schools here:

<https://www.keepwalestidy.cymru/Handlers/Download.ashx?IDMF=7eeaabb5-bbd8-40e9-912d-2a2b6f5b347b>

and for primaries here: <https://www.keepwalestidy.cymru/Handlers/Download.ashx?IDMF=a44430bb-ea54-4167-8be6-0208a8f4d367>

Welsh versions available on: <https://www.keepwalestidy.cymru/Pages/FAQs/Site/cy/Category/adnoddau-ecogolion>

 Describe your idea for tackling climate action within the school on the platform and share on the WtGW platform or on social media using @GoalWales #wtgw #climateaction #sdg13



IDEAS FOR FURTHER FOLLOW-UP AND ACTIONS

Before undertaking your school audit, you can further explore the idea of sustainability and action through the activities outlined in PowerPoint slides 4 - 8

- I wish for you...

<https://www.youtube.com/watch?v=-qzS4L5BiTM>

Watch the video and think about their choices and plan changes that they can make to limit the impact of climate change

- It could well be that your grandchildren attend your school in the future. Make a secret pledge to your fictional grandchild and put in a jar
- Make their own group pledges to be filmed by each other (to be submitted to the WtGW platform, their own Instagram with the WGW hash tag) Appendix 16

Artists and climate change

Show this additional PowerPoint Presentation on how artists have raised awareness of the need for climate action in different ways including creating street art and performing on musical instruments carved from ice. It includes eggs of art installations in Carmarthenshire.

These works can stop us in our tracks and make us think about climate change in ways that may spur us on to action more effectively than listening to the news and being presented with statistics.

The last slide encourages learners to create their own creative response to climate change.

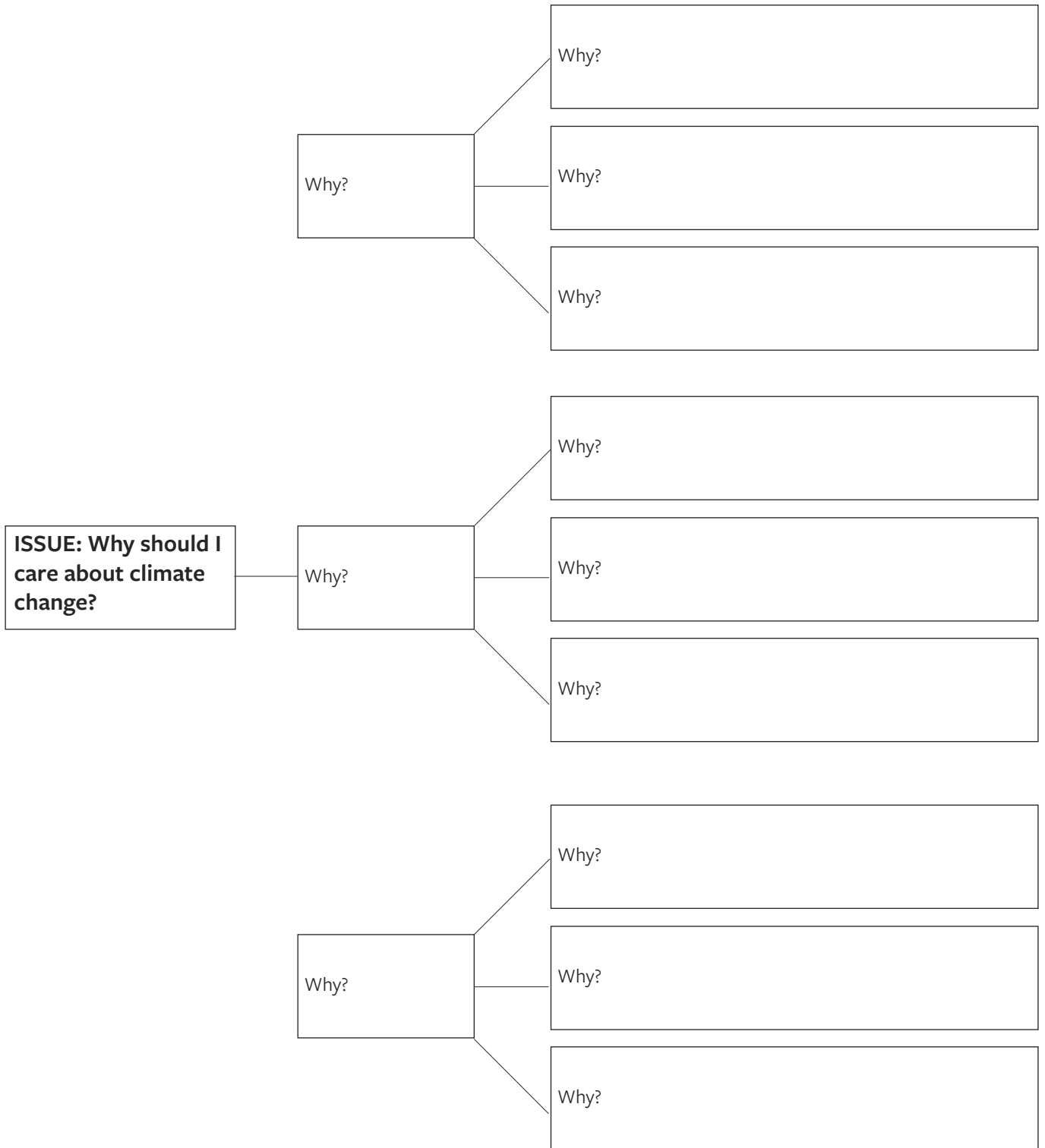
Extinction Rebellion

This non-violent civil disobedience activist movement, launched in the UK in 2018, are attracting a great deal of attention. They are calling for governments to declare a "climate and ecological emergency" and take immediate action to address climate change. Recently Extinction Rebellion used large, colourful boats to stop traffic in Cardiff, Glasgow, Bristol, Leeds, and London.

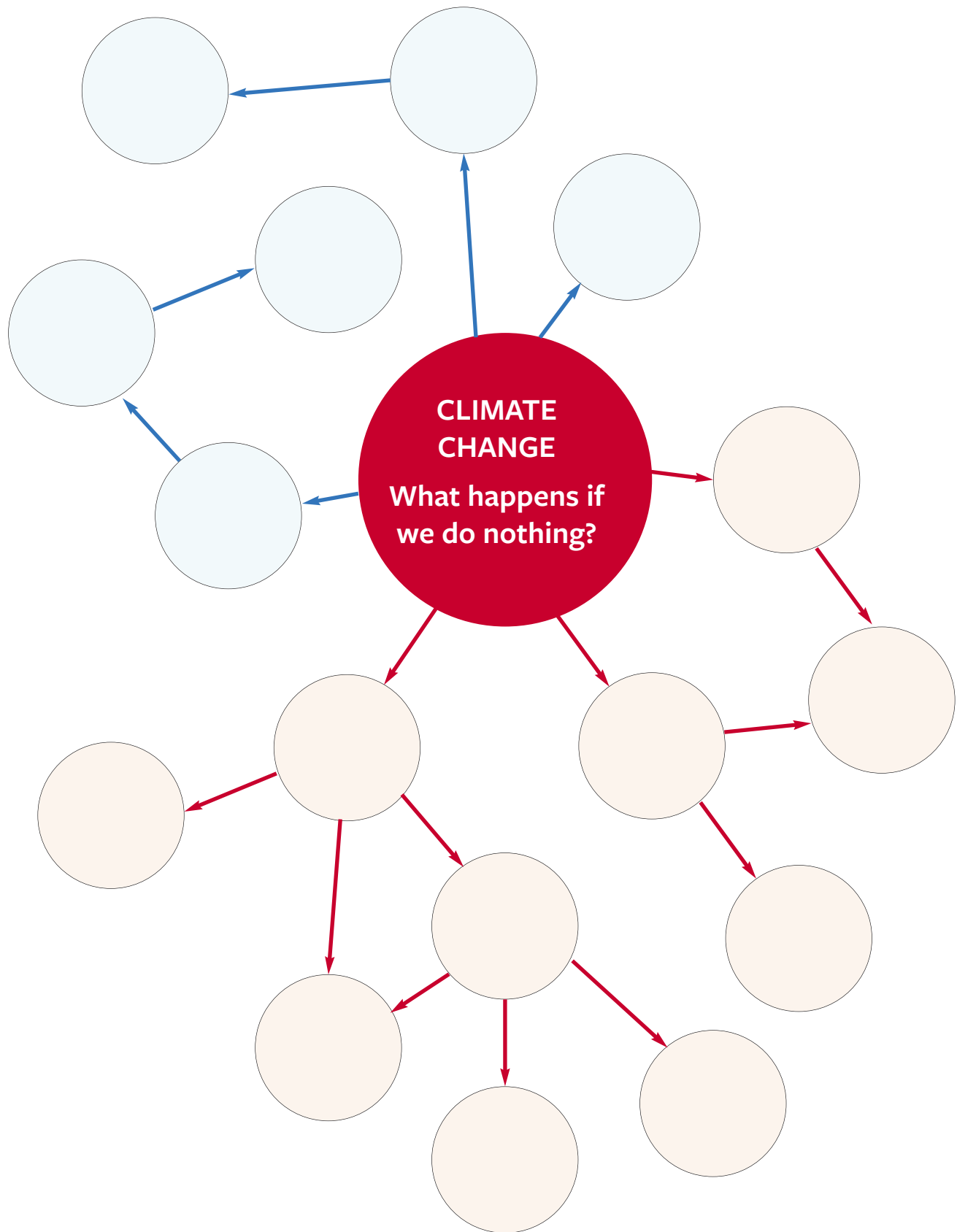
According to <https://www.bbc.co.uk/news/uk-48607989> over 1,000 protesters were arrested - most on suspicion of not following police instructions to move.

Ask learners to find other news stories on Extinction Rebellion from different sources and report back on positive and negative features. Discuss potential bias in these. Set up a class debate on the proposition "We should leave it to the government to sort out the climate crisis".

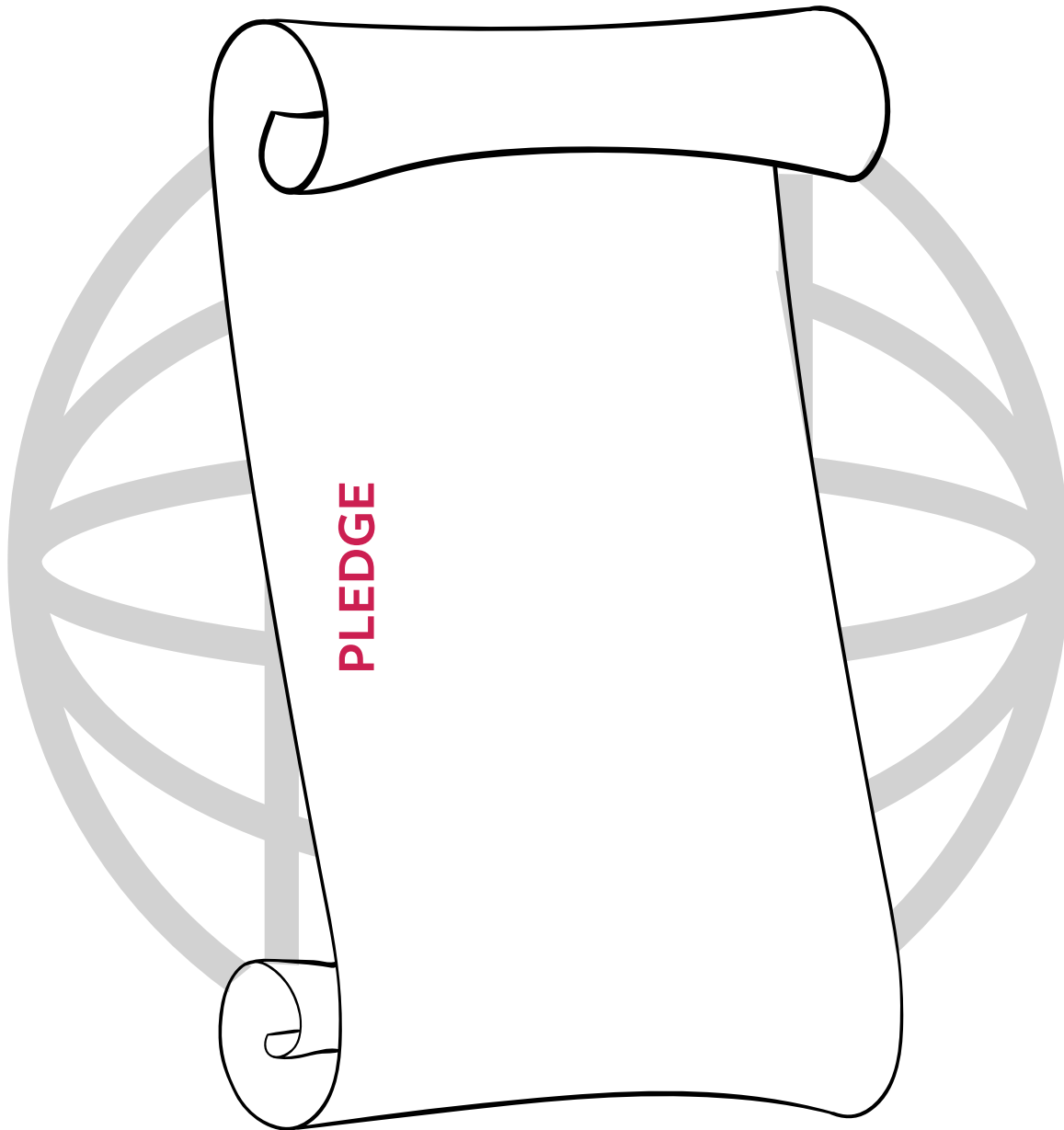
Appendix 13 - Why why why Chain



Appendix 14 - Consequences map



CLIMATE CHANGE



CHANGE FOR

WALK

#walktheglobalwalk

This project, led by the Region of Tuscany and Oxfam Italia Intercultura and co-funded by the European Union, connects Italy, France, Croatia, Cyprus, Wales, Scotland, Portugal, Greece, Romania, Bulgaria, Bosnia and Herzegovina, and Albania.

Walk the Global Walk is a Global Citizenship Education project for schools in partnership with Local Authorities and NGOs and focuses on the Sustainable Development Goals (SDGs) and specifically on:

- Sustainable Cities and Communities (SDG 11)
- Climate Action (SDG 13)
- Peace, Justice and Strong Institutions (SDG 16)

In Wales, the project partners are Carmarthenshire County Council and Dolen Cymru Lesotho. Both are committed to developing global learning and facilitating sustainable links between teachers and schools. Walk the Global Walk is paving the way for Successful Futures in Wales by providing authentic learning experiences to help pupils see their connections to the wider world and develop as active, ethical and informed citizens.

The project offers:

- Teacher training on the Walk the Global Walk project and the Teachers' Briefing Pack, which focuses on Global Citizenship Education topics;
- Support for teachers in implementing the programme in schools;
- Possibility of a link with a school in Lesotho
- Training for students – Global Goalkeepers – in leadership and active citizenship;
- Support for Global Goalkeeper groups who will help raise awareness with their peers and local community;
- Support for school and community based actions
- Participation for students in the annual Global Walk in support of sustainable development.
- Possibility of participation in a Summer School in Cyprus, Portugal or Italy

Contact us to find out how you can get involved:

Polly Seton, Project Coordinator: pseton@carmarthenshire.gov.uk

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Sharon Flint, Education Officer: sharon@dolencymru.org.uk

