

CLIMATE CHANGE

EDUCATIONAL RESOURCE FOR TEACHERS AND FACILITATORS



CONCERN
worldwide

CLIMATE CHANGE

EDUCATIONAL RESOURCE



CLIMATE CHANGE is one of the biggest challenges facing the world today. Our behaviour here in Ireland has a large effect on climate change around the world but is also affecting us here at home. Learn more about these connections, and what we can, and must do now before it is too late.

WHAT'S THE DIFFERENCE BETWEEN WEATHER AND CLIMATE?

WEATHER

refers to day to day temperatures.

CLIMATE

is the average weather in a place over many years. While the weather can change in just a few hours, climate takes hundreds, thousands, even millions of years to change.



WHAT IS CLIMATE CHANGE?

CLIMATE CHANGE is a large-scale, long-term shift in the planet's weather patterns or average temperatures.

While this can be natural, meteorologists are now seeing this is being caused by man-made activity.



1.

Carbon dioxide (CO₂) enters the earth's atmosphere from volcanoes, decaying plants, breathing humans and animals, and the surface of the sea. CO₂ leaves the earth's atmosphere when it is used by plants during photosynthesis, absorbed into the sea or stored in soil and sediment. This cycle keeps everything on the earth alive.

2.

The CO₂ in the atmosphere traps heat from the sun. This is why CO₂ is called a greenhouse gas. It creates a blanket of warmth, known as the greenhouse effect that keeps the earth from freezing. The more CO₂ in the atmosphere, the warmer the earth becomes. The amount of CO₂ in the atmosphere over the last 8000 years has been stable, creating suitable conditions for human beings to thrive

CARBON CYCLE AND CLIMATE CHANGE

Discussion point

Can you name everyday ways humans burn fossil fuels?

4.

But burning these fuels also releases more CO₂ into the atmosphere which is causing heat to become trapped leading to increasing temperatures, melting ice caps and rising sea levels.

3.

But about 200 years ago we began digging up the soil to extract fossil fuels such as coal, gas and oil. The energy stored inside of them is used to fuel our **factories, cars** and to **create electricity**.

CLIMATE CHANGE

EDUCATIONAL RESOURCE



FOOD WASTE

795 MILLION PEOPLE ARE HUNGRY IN THE WORLD TODAY AND YET

- Ireland wastes **1 MILLION** tons of food per year
- The world wastes **1.3 BILLION** tons of food per year

HOW DOES THIS IMPACT CLIMATE CHANGE?



- The energy that goes into the production, harvesting, transporting, and packaging of that wasted food generates more than 3.3 billion metric tons of CO₂
- Most food waste is not composted and ends up in landfills - causing the rotting food to release large amounts of CO₂
- If all the food wasted was a country it would be the 3rd largest emitter of greenhouse gases right behind the USA and China

LOVE FOOD hate waste

credit: <http://www.lovefoodhatewaste.com/>

HOW CAN WE REDUCE FOOD WASTE?

Buy only what we need • Make shopping lists
Freeze food • Compost



credit www.stopfoodwaste.ie



TEACHER/ FACILITATOR ACTIVITY 1

- After briefing students on the Carbon Cycle, elicit what the term Carbon Footprint means
- Place students in groups and ask them to draw three large feet on paper
 - School Carbon Footprint
 - National Carbon Footprint
 - International Carbon Footprint
- Ask students to write as many things as possible, (in RED marker) that contribute to each Carbon Footprint as possible e.g. does the school advocate carpooling/ have compost bins?
- Ask groups to share findings
- Ask students to return to groups and in GREEN marker write possible solutions for each of the red terms

■ **NEED** - Markers, 3 sheets Flip Chart Paper per group, Red and Green markers

■ **ROOM** - Students in groups

DEBRIEF

How are our actions (in red) contributing to climate change?

CARBON FOOTPRINT: The amount of carbon dioxide (CO₂) released into the atmosphere as a result of the activities of a particular individual, organization, or community.



CLIMATE CHANGE

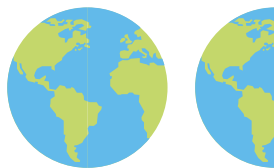
EDUCATIONAL RESOURCE



Consequences of Climate Change on countries in the Global South

While the Global North is the biggest contributor to CO₂ emissions, climate change hits the poor in the Global South the hardest.

If the entire world used resources and energy like the USA, we would need 1.5 planet Earths to sustain the entire population!



Poor people living in tropical countries are more exposed to storms and extreme weather, their housing and infrastructure is weaker, and they have less savings or insurance to fall back on when disaster strikes. Families that rely on producing their own food are also hit by drought and floods leading to a lack of food and food insecurity.

CLIMATE CHANGE AND MALAWI

HUNGER

Malawi is one of the world's poorest countries and has been hard hit by the effects of climate change. Ongoing drought has devastated crop production in the country leaving families without a food source. This is also driving up food prices in supermarkets to double the price of groceries in Ireland.



EDUCATION AND GENDER EQUALITY

People are selling everything they have right down to their handheld farming tools, leaving them extremely vulnerable to hunger. People withdraw children from school, leaving their entire futures at risk. People marry off young girls, fearful that they cannot feed them as well as other family members.

Discussion point

How is Climate Change impacting on the development of Malawi?

What is Concern doing?

Concern is helping train vulnerable farmers and families in how to prepare their land so that they harvest as much water as possible from rainfall and use every drop of moisture productively. Concern is also helping by running training sessions on how to produce compost in order to increase soil fertility and to reduce reliance on expensive chemical fertilisers.

This field in Malawi may look like crops have failed, but in fact the opposite! The use of old maize leaves on top of soil is a process called 'mulching', which helps keep the moisture in the land.



Farm in Mtchinji, Malawi, 2016. Photo: Jane O'Toole

TEACHER/ FACILITATOR ACTIVITY 2



- **NEED** - Photocopy of all 'Tweets' per group
- **ROOM** - Students in groups

- Brief students on the impact of climate change in Global South countries
- Ask students if they see any injustice in how the Global South faces the brunt of climate change - how is this unfair?
- Place students in small groups and distribute tweets to each group
- Ask students to read each tweet and point out that the country each tweeter is from is after their name eg @IsaacMalawi - Isaac lives in Malawi
- Advise students to note the country, gender of tweeter, estimate of age, time tweet sent
- Ask students to rank the tweets in order of who climate change is affecting the most
- Ask groups for feedback
 - How is climate change affecting people in different ways?
 - Is climate change affecting everyone equally?
 - How is climate change affecting each country in the tweets?
- Ask groups to return to their tweets and rank which tweeters are contributing the most to climate change
- Ask groups for feedback - how can these people reduce their carbon footprint?

DEBRIEF

- Indicate that climate change is devastating communities and causing massive issues such as hunger, poverty and destruction.
- Emphasise the impact climate change is having on the development of countries in the Global South.
- Indicate the injustice of the Global North contributing so much to climate change.

*all tweets are fake

TOP TIP

This exercise can be used as an activity for homework - Distribute tweets to students for homework prior to activity. Ask students to research each place mentioned in tweets and report three facts on climate change in each area.



FatimaSenai

@FatimaSenaiEthiopia



Ughhh up at 5AM to go get water. Missing another day of school to work on the farm. Think I might be out 4week-harvest failed-Mam needs more help #climatechange #cropfailure #hungry

← Reply ↻ Retweet ★ Favorite ⋮ More

5:00 AM · 1 Sept 16 · Embed this Tweet



Mary Hannigan

@MaryHanniganCrossmolinaMayo



2floods within 6months in Crossmolina!My shop completely flooded 3wks b4 Xmas :(We need to ACT NOW! #stormdesmond #climatechange #xmasiscancelled

← Reply ↻ Retweet ★ Favorite ⋮ More

7:00AM · 2 Dec 15 · Embed this Tweet



Issac Noah

@IssacNoahMalawi



I've never been on a plane, don't own a car and climate change affects me most. Another failed harvest this year. #climatechange #hunger #drought #frustrated #wakeupworld

← Reply ↻ Retweets ★ Favorite ⋮ More

4:56 PM · 26 Jul 16 · Embed this Tweet



RichKidsofTwitter

@RichKidsofCalifornia



Drought tlk is sooo boring :(Needed cheering up so got a new SUV in black...and white!One 4 fridays n one for saturdays ;) #richkidsofcali #carsquadgoals #lit #LA

← Reply ↻ 45,000 Retweets ★ Favorite ⋮ More

13:00 · 2 Jun 16 · Embed this Tweet



TEACHER/ FACILITATOR ACTIVITY 3

Problem Solution Tree



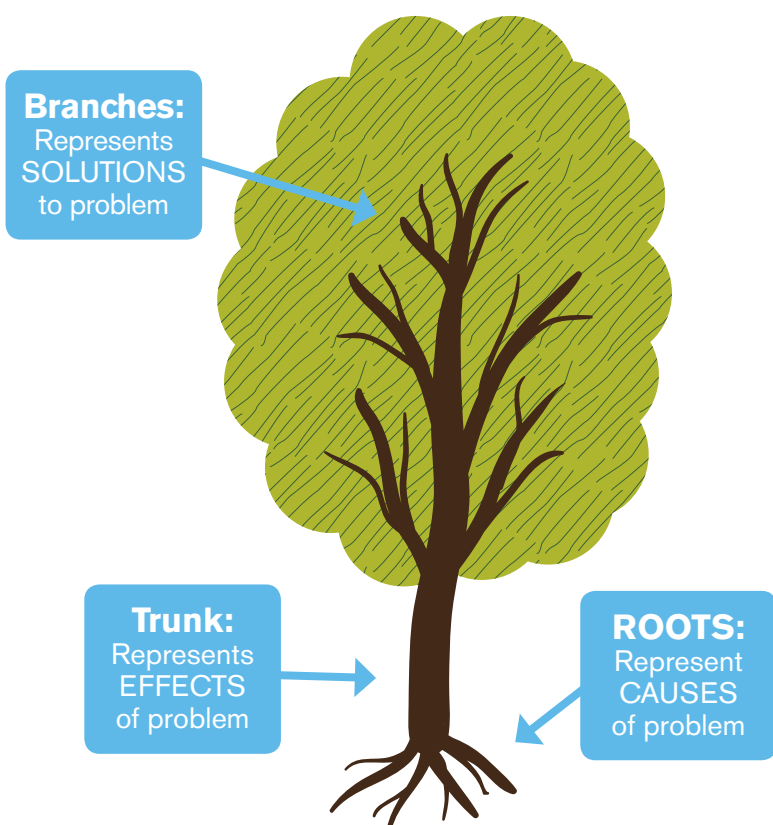
■ **NEED** - Markers, Flipchart paper, Image of Problem Solution Tree

■ **ROOM** - Students in Groups

- Elicit from students some CAUSES and consequences of climate change
- Ask what needs to be done to curb the effects of climate change
- Produce the image of the Problem Solution Tree
- Ask students to replicate the tree and to write
 1. The causes of climate change at the ROOTS
 2. The EFFECTS of climate change (people, planet, poverty etc) at the TRUNK
 3. Possible SOLUTIONS at the BRANCHES

DEBRIEF

- Ask students to present their trees
- Ask students to look at their solutions and to make a note of which they can apply to their school or local community



TOP TIP

This can be used in Art class or to create a giant display. Give each group a large area to draw/paint i.e. one group focuses on roots, another on the trunk and the other on the leaves.

Transforming Concern into ACTION!



- School- Lobby for compost bins!
- Spread awareness- How can we help reduce our carbon footprint?
- Lobby TDs- How is Ireland doing on their CO₂ emissions?
- Contact Concern to book a workshop to learn more!