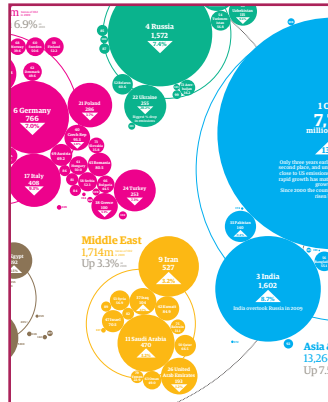


1 Who is responsible for climate change?

Introduction

This activity uses a series of data sets on climate change gasses to help learners think about *'who is responsible for climate change?'*

With climate change regularly identified by young people as one of the issues they are most concerned about, this activity enables them to engage critically with the data behind the issue and to form their own ideas about their relationship to this global issue.



Key Stage: 3+

Time: 30-60 mins

Learning Style: teacher-led
(small groups of 4-6)

Why should we think about this ?

Climate change is something that regularly tops polls of young people's concerns about their future, but also as something they can act on and feel empowered by. The media (often the main source of information for young people) frequently misrepresents the arguments about climate change and this has created a rather bi-polar debate about the issue and who is responsible.

The reality is that climate change is incredibly complex and that responsibility is not an easy thing to establish. This activity will help learners to understand this complexity and take Time 2 Think about responsibility at a global, national and personal level. It is important as educators that we give learners the chance to engage in the complexity that will shape their futures, but that they are also already part of!

When should we think about this ?

This activity could be used in a variety of settings, but is perhaps best suited to spaces where climate change, global issues, citizenship or a similar focus is already part of the planning. Depending on the school set-up it could be used in tutorial time or form part of a larger off-timetable day around this issue.

Though climate change is a cross-curricula issue, this activity will be particularly suited to geography and citizenship teaching.

2

Who is responsible for climate change?

Learning Activities



What do I think about... *who is responsible for climate change?*

A key purpose of Time 2 Think is to allow learners to trace the way their thinking develops (how it is influenced and constructed). The activity should therefore start by giving learners a few moments to think about: *Who is responsible for climate change?*

- 1.) Give learners this question without direction and invite them to discuss it in their groups for about 3-4 mins.
- 2.) Invite groups to share their thinking with the room and record responses using the whiteboard, a flipchart or similar method.
- 3.) Help them to identify any groupings of responsibility that may emerge - individuals, organisations, regions, countries etc.



How can I develop my thinking ?

Familiarise yourself with the card-sorting templates (Resource A, pages 6-7) and data sets (Resource B, pages 8-9) at the end of this activity.

These are the basis of a series of activities designed to help learners develop their thinking further. The activities require some geographical knowledge and so we have offered two methods according to how advanced you consider this to be in your learners. Method A is for those with good knowledge of countries of the world. Method B provides the countries (Resource A) for those with less knowledge.

Method A

1. Give each group of learners around 20 blank pieces of paper/ card (with more available should they need them). The pieces should be about the size of a typical business card and large enough for them to write a country name on.
2. Select the data sets you wish to use from Resource B and read out the first chosen data category to the group (i.e. total emissions of CO₂ by country) making sure they have understood what it means.

3

Who is responsible for climate change?

3. Ask them to think about which 10 countries (or fewer if time-constrained) they think are most responsible for climate change using this measure (data). They should write the name of each country they think of onto a single piece of paper/card (one country per piece) and order them from most responsible to least responsible.

4. Once completed, provide the correct answers interacting with the groups to see who they had 1st, 2nd, 3rd and so on. They could move their cards to reflect the correct order, adding any countries they did not have as you reveal the answers.

5. Once you have revealed the order you might like to spend a few moments exploring the results with them. Some questions to support this could include:

Which countries were as you expected? Why was this?

Were there any countries you didn't expect? Why?

Which other countries did you have that weren't in the list? Why did you choose those ones?

6. Ask your learners to keep the cards they have made but to be prepared to make some new ones and then repeat the process (steps 2-5 above) for as many data sets as you wish to/have time for. When you get to step 5, supplementary questions might include:

How has the list changed using this new measure?

Why might responsibility change when we measure it differently/in this way?

Method B

1. Give each group of learners a set of the country cards from the template in Resource A.

2. Select the data sets you wish to use from Resource B and read out the first chosen data category to the group (i.e. total emissions of CO₂ by country) making sure they have understood what it means.

3. Ask them to think about which 10 countries (or fewer if time-constrained) they think are most responsible for climate change using this measure (data). They should select the countries they think will be in the top 10 and arrange them into an order they can agree on in their group from most responsible to least responsible.

4. - 6. As for **Method A** but adapting for pre-written cards (i.e. in step 4, add the correct cards as the answers are shared).

Teaching Tip:

A suggested minimum is to use data sets B1, B2 & B3. This provides a good range of responses for learners to think about responsibility.

4 Who is responsible for climate change?



What do I think now ?

Once you have done your data sets, ask each group of learners to use the following prompt questions to explore their thoughts about responsibility for climate change at the end of the activities.

Which measure do you think is the best to use for deciding who is responsible for climate change?

How would you argue your case for using this measure over one of the others?

Bring the room back together and ask each group to briefly say which measure they have chosen and why they think that is the better measure of responsibility.

Return to the results of their initial thoughts about who is responsible for climate change. How do they feel now? Have their ideas of who is responsible changed as a result of looking at these sets of data?



Why do I think this ?

This is the most important question in the Time 2 Think process and deepens the critical literacy skills of learners. Where learners are able to trace the origins of their thoughts and feelings (family, experience, peers, media etc) they can become more confident to challenge their own thoughts and engage with the ideas and opinions of others.

This is also the most challenging part of the process and teachers/facilitators will need to decide whether to include this stage for their learners.

We feel it remains vital for teachers/facilitators to be aware of and reflect on this stage for themselves as it may help to deal with responses and reactions from learners, and identify future learning needs.

If you feel confident to explore your learners' thoughts and feelings in greater depth you could gently encourage learners to think about the following questions/issues in relation to this activity:

How do I judge who is responsible for something?

Who or what might influence my decision about who is responsible?

5 Who is responsible for climate change?

What might cause me to change my mind about who is responsible?

Is responsibility the same as blame?

Why might we disagree about who is responsible for something?

If we can't agree who is responsible can we still take action?

Extension ideas

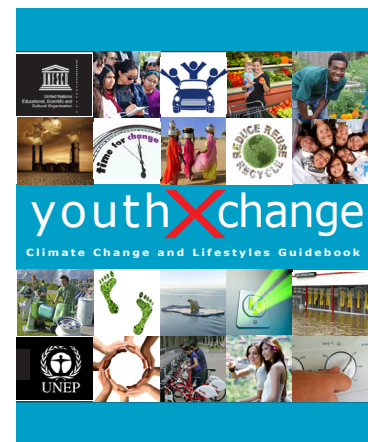
➔ Where can we take this thinking ?

There are many potential routes to develop your thinking. You could explore how data is used by searching for other sets of data and questioning how they are trying to influence the user.

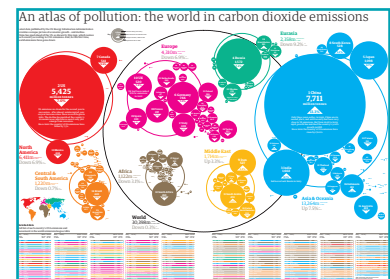
Could you represent the data used in this activity by making a graphic? You could look at the map produced by The Guardian (see link bottom right) for ideas.

You could explore what governments and others are doing to respond to the challenges of climate change. Do you feel they are facing up to their responsibilities?

You could think about your own contribution to and responsibility for climate change. The UN YouthXChange Climate Change and Lifestyles Guidebook (see link right) shares ideas from young people (15-24) around the world about this.



available from
www.lifeworldslearning.co.uk/online.html



available from
www.time2think.org.uk/library.html

If you have used this activity in your classroom and have any examples you would like to share or would like to provide any comments or feedback as a teacher then we'd love to hear from you.

We want **Time 2 Think** to evolve into a community of practice to further develop ideas and organise events and opportunities, but for this we need the involvement of users such as yourself.

Send any contributions, or contact us to find out more, at ask@lifeworldslearning.co.uk

Resource A: country cards

Australia

USA

UK

Japan

Germany

France

Russia

India

China

Canada

South Korea

Iran

Qatar

Bahrain

United Arab
Emirates

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Who is responsible for climate change?

Singapore

Trinidad &
Tobago

Kuwait

Nauru

Luxembourg

Brunei

Ukraine

Switzerland

Finland

Netherlands

Belgium

Ireland

Cyprus

Resource B: data sets

B1 - Total carbon dioxide (CO₂) emissions by country in 2009

Rank	Country	Million Tonnes	% world total
1.	China	7,711	25.4
2.	US	5,425	17.8
3.	India	1,602	5.3
4.	Russia	1,572	5.2
5.	Japan	1,098	3.6
6.	Germany	766	2.5
7.	Canada	541	1.8
8.	South Korea	528	1.74
9.	Iran	527	1.73
10.	UK	520	1.71

Source: Energy Information Administration (EIA), 2009

Note: this data is the most recently available international set measuring carbon dioxide (CO₂) emissions at the national level and is calculated by looking at fossil fuel use in each country and converting this into CO₂ emissions.

B2 - Carbon dioxide (CO₂) emissions per capita/person by country in 2009

Rank	Country	Tonnes
1.	Qatar	79.82
2.	Bahrain	42.68
3.	United Arab Emirates	40.31
4.	Trinidad & Tobago	38.88
5.	Singapore	34.59
6.	Kuwait	31.52
7.	Nauru	21.96
8.	Luxembourg	21.51
9.	Australia	19.64
10.	Brunei	19.53

Source: Energy Information Administration (EIA), 2009

Note: this data is the most recently available international set measuring carbon dioxide (CO₂) emissions per person at the national level. It is calculated using total CO₂ emissions and total population information.

B3 - Total historical emissions of CO₂ 1850-2007 by country

Rank	Country	Million Tonnes	% world total
1.	US	339,174	28.8
2.	China	105,915	9.0
3.	Russia	94,679	8.0
4.	Germany	81,195	6.9
5.	UK	68,763	5.8
6.	Japan	45,629	3.87
7.	France	32,667	2.77
8.	India	28,824	2.44
9.	Canada	25,716	2.2
10.	Ukraine	25,431	2.2

Source: World Resources Institute (WRI), 2011

Note: this data adds up the emissions of countries over time to create a new list of the top ten emitters. This measure is calculated because emissions can stay in the atmosphere for many years and the long term impact of emissions is therefore important for climate change negotiations.

B4 - Greenhouse gas emissions from consumption per capita/person by country in 2001

Rank	Country	Tonnes (CO ₂ e)
1.	USA	28.6
2.	Australia	20.6
3.	Canada	19.6
4.	Switzerland	18.4
5.	Finland	18
6.	Netherlands	16.7
7.	Belgium	16.5
8.	Ireland	16
9.	Cyprus	15.9
10.	UK	15.4

Source: Carbon Footprint of Nations, Norwegian University of Science and Technology, 2009

Note: this is another way to look at responsibility and takes into account the idea that if a country imports and consumes goods made elsewhere then it should take responsibility for those emissions. This data set is not for all countries and the data was last gathered in 2001, but it shows another way to think about things. With this model the UK would take responsibility for goods it consumes that are made in China for example.