LESSON D3
CLIMATE JUSTICE [1]

MAIN SUBJECTS
Social sciences / Geography

DURATION
~ Preparation: 15 min
~ Activity: 2h

AGE GROUP
9-12 years

LEARNING OUTCOMES
Through a roleplaying game, students discover the inequalities that exist between countries with respect to wealth and greenhouse gas emissions. Another roleplaying game helps them realise that vulnerability to climate change is not the same for all countries – the most vulnerable not always being the most responsible.

Students learn that:
~ Not all countries emit the same amount of greenhouse gases, nor are they equally vulnerable to the impact of climate change.
~ The wealthiest countries emit the greatest amounts of greenhouse gases.
~ Droughts, storms and floods exacerbated by climate change mainly affect people living in developing countries, who have contributed the least to climate change.
~ The majority of the world's people live in rapidly developing countries; this will have an impact on future greenhouse gas emissions.
~ There is growing awareness of the need for urgent and widespread action to limit climate change and protect the most vulnerable.
~ Science can explain the origins and mechanisms of what is happening, but it is the citizens and legislation of a country that guide actions.

KEYWORDS
Climate change, greenhouse gases, responsibility, vulnerability, inequity, climate justice

TEACHING METHOD
Roleplaying games

PREPARATION 15 MIN

EQUIPMENT
- **WORKSHEETS D3.1** [2], **D3.2** (or a set of toy cars), **D3.3, D3.4.**
- Sheets of paper or stickers.
- Optional: a world map + labels for each continent: North America, Latin America, Europe, Oceania, Africa, Asia (they can also be written on the floor).

LESSON PREPARATION
This lesson contains two independent activities. You can choose to do one or the other, or both.

Activity 1
- Make sure that the room contains one (and only one) chair per student.
- Print out **WORKSHEET D3.1** (one copy for you).
- Gather a set of small toy cars (one car per student) or, if not possible, print out **WORKSHEET D3.2** (one copy for the whole class).
- Place the continent labels at different locations in the room (either on the floor or on the wall).

Activity 2
Print out **WORKSHEETS D3.3, D3.4,** and **D3.5** (one for each group of 6 students).

INTRODUCTION 20 MIN

We have learned about the greenhouse effect and the consequences of climate change. We have seen that many of the resources we need may be affected. Initiate a debate with your students on whether they think that everyone in the world is equally responsible for climate change and will be equally affected.

1 This lesson was inspired by Lesson 4 of the "Creating Futures" resource, produced under the scope of the Education for a Just World initiative, by Trócaire and the Centre for Human Rights and Citizenship Education, DCU Institute of Education (Dublin, Ireland); it was also inspired by the education resource "Ma maison, ma planète et moi!" produced by *La main à la pâte* foundation. The OCE is grateful to the authors.

2 An Open Office version is available on the OCE's website if you need to adapt/update the lesson (data-chair-game-EN.ods)

PROCEDURE 1H40

ACTIVITY 1: WHO IS MOST RESPONSIBLE FOR CLIMATE CHANGE? 45 MIN

TEACHER TIP
You can also choose to do this activity with small figurines on a table instead of using chairs.

1. Ask the students to form a standing circle: they represent the (almost) 8 billion earthlings. You may choose gender to explain the concept of this activity. Discuss what proportion of the world is male and what proportion is female and ask the students to divide themselves accordingly. The 8 billion people in the world can roughly be divided into 4 billion females and 4 billion males. Half the class should stand on one side of the room and half the class on the other side (regardless of actual gender).

Students in a circle outdoors.

2. Then ask the students to reform a large circle. Ask them to consider the population of each of the continents labelled around the room and to divide themselves up accordingly — based on what they think to be true, as they don't have any numerical data yet.

3. Using the first table provided in **WORKSHEET D3.1,** tell the class the true distribution pattern of population for the continents and let the students reposition themselves as needed. Each student now represents a number of people on a particular continent. For example, there are so few people in Oceania, compared to the other continents, that it does not even have one "full" student. Each student will continue to represent their continent for the remainder of this activity. Discuss with the class their responses to the actual population breakdown.

4. Each student now retrieves a chair and sits around their assigned continent label in a small group. Tell the students that all of their chairs combined represent the wealth of the world. In their groups, the students discuss how they think the chairs (wealth) are divided amongst all the people of the world in each continent. Each group shares their thoughts with the rest of the class. The class decides together if some chairs should be moved to a different continent. The chairs are moved as the class thinks appropriate. Remember, the students do not move with the chair but stay with their continent.

Students representing the African population and its wealth.

Students representing the European population and its wealth.

5. Using the second table provided in **WORKSHEET D3.1,** inform the students about the true distribution of wealth. Move the chairs to different continents as needed. Ask the students to sit on a chair without leaving their continent group. In some continents,

some students will be left without a seat (or will have to share a chair), while in other continents there will be a surplus of chairs.

6. Discuss with the class how this feels and what has just been demonstrated, including ideas related to conflict, migration, justice and inequality.

7. The students remain in their continents with their assigned number of chairs. They start by discussing in their groups if each person in the world emits the same amount of greenhouse gases. The students also discuss on which continents in the world people emit more greenhouse gases per capita, and on which continents they emit less.

8. The toy cars (or their equivalent in **WORKSHEET D3.2**) represent the average amount of greenhouse gases emitted in a year. Give each group the amount of cars that represents the corresponding average greenhouse gas emissions of each continent (see the third table in **WORKSHEET D3.1**). *How many cars per person are there in each continent?*

Discuss greenhouse gas emissions with regard to the population and wealth of their continent. Highlight that the greenhouse gas emissions per capita are not the same for all continents. *What will happen if more and more people around the world adopt the lifestyle of people in Europe and North America? Does every person on a given continent emit the same amount of greenhouse gases?* (Compare the number of chairs to the number of cars in the different groups.)

You can use a world map to summarise the activity and have the class mark on the map population, wealth and greenhouse gas emissions. This map is provided only as an example: it was made by a class some years ago, so the distributions are outdated and do not correspond to today's values.

ACTIVITY 2: WHO IS MOST VULNERABLE TO CLIMATE CHANGE? 35 MIN

9. Now that they have discussed who is most responsible for climate change, the class will find out who is most vulnerable to climate change. Divide the class into groups of up to 6 students and give each member of a group a different roleplay card from **WORKSHEETS D3.3**.

10. Ask the students to stand in a line across the middle of the room holding their roleplay card so that the others can see their role. Read the "Forwards and Backwards" statements of **WORKSHEET D3.4** and ask the students to:

- step forward for each of the first set of statements, if it applies to their role;
- step backwards for each of the second set of statements, if it applies to their role.

Forwards and backwards with climate change.

11. Discuss with the students who in the world is most vulnerable to climate change and why.

WRAP-UP 20 MIN

Conclude the lesson by asking the students: *Given what you have learned about who is responsible for and who is most vulnerable to climate change, do you think climate change is "fair"?* The issues of wealth, greenhouse gas emissions and differences in exposure and vulnerability to climate change should be discussed. (The wealthiest countries are the biggest greenhouse gas emitters per capita but are the least exposed to and affected by the impacts of climate change. This is, in most cases, due to their geographic locations and to the resources they have available to adapt to and cope with climate change consequences.)

BACKGROUND FOR TEACHERS

Current greenhouse gas emissions are unevenly distributed amongst countries. For example, China is the biggest emitter of greenhouse gases but due to its very large population size, it has lower per capita emissions than the United States. On the other hand, although the population of the United States is lesser by about a billion, the average American has higher emissions than an average Chinese person.

Looking at the past, developed countries have contributed heavily to the current CO_2 concentration: during the 100 years between 1880 and 1980, the United States and Europe each contributed 30% of the CO_2 emitted by fossil fuel burning. Even today, developed countries are the biggest greenhouse gas emitters. The increase in the Asian contribution (China and India) began around the year 2000, with a growth in their industrialisation process and population.

Not all countries contribute equally to global greenhouse gas emissions and not all countries are equally affected by climate change consequences; frequently, the most affected are not the most responsible. Ensuring there is **climate justice** in a given action thus requires the weighing up of different factors, including wealth, greenhouse gas emissions, energy needs, etc.

Science can and must give the facts and the evidence, improve future projections, estimate probability of events as best it can, and establish conclusions based on rationality and make them known and understood by everybody. However, **science alone cannot provide the necessary rules for the steps to be taken, nor say what is fair or prove that there is justice in global solidarity.** With such complex and global issues, **the ethical and moral values of both individuals and societies are ultimately the source of judgment and decisions.**

WORKSHEET D3.1

		NUMBER OF STUDENTS PER CONTINENT															
CONTINENT	POPULATION %	Class with 15 students	Class with 16 students	Class with 17 students	Class with 18 students	Class with 19 students	Class with 20 students	Class with 21 students	Class with 22 students	Class with 23 students	Class with 24 students	Class with 25 students	Class with 26 students	Class with 27 students	Class with 28 students	Class with 29 students	Class with 30 students
Africa	17%	3	3	3	3	3	3	4	4	4	4	4	4	5	5	5	5
Asia	59%	9	9	10	11	11	12	12	13	14	14	15	16	16	17	18	18
Europe	10%	1	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3
Latin America	8%	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2
North America	5%	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Oceania	1%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	100%	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Source: https://www.worldometers.info/world-population/#region

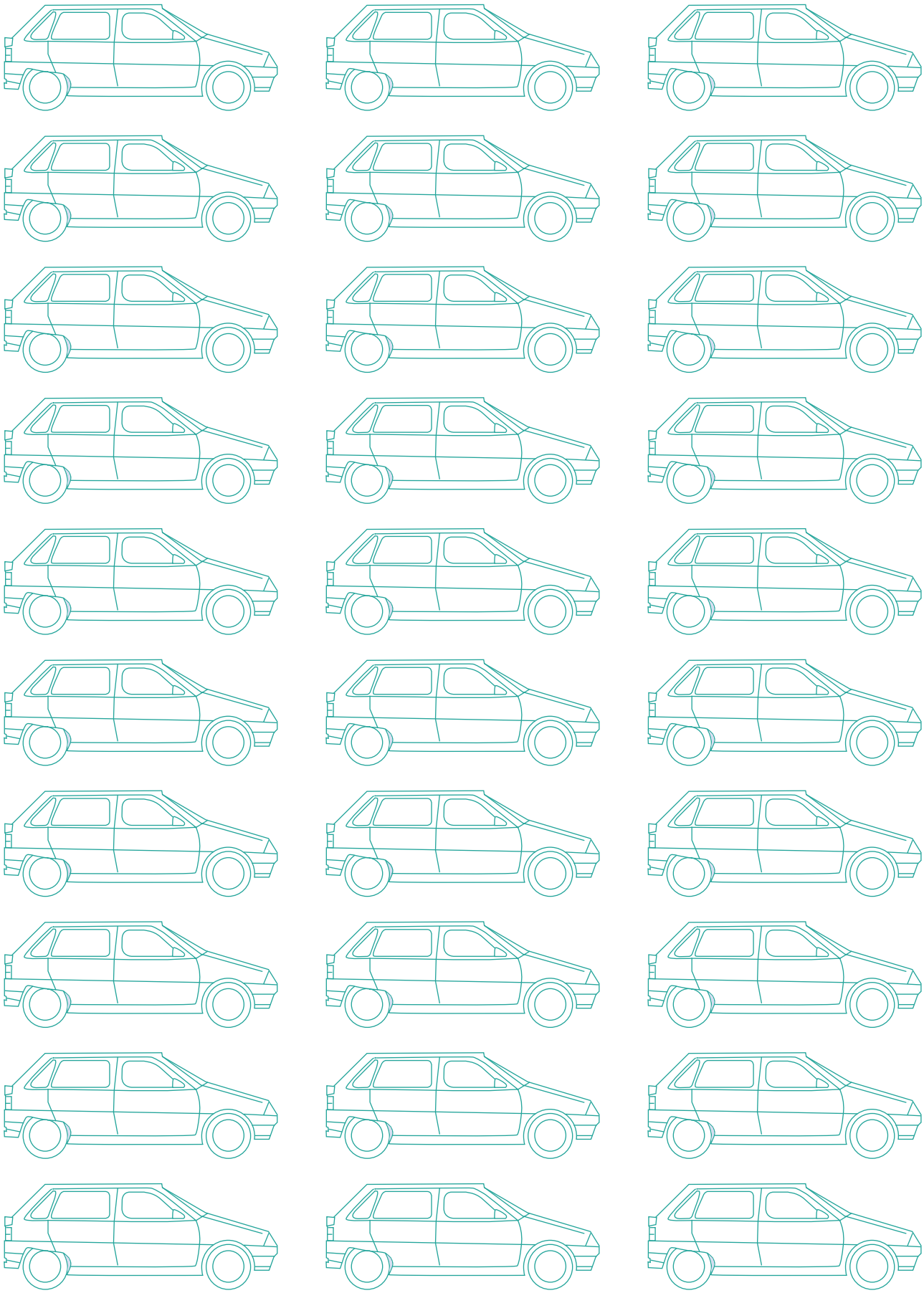
		NUMBER OF "CHAIRS" PER CONTINENT															
CONTINENT	WEALTH %	Class with 15 students	Class with 16 students	Class with 17 students	Class with 18 students	Class with 19 students	Class with 20 students	Class with 21 students	Class with 22 students	Class with 23 students	Class with 24 students	Class with 25 students	Class with 26 students	Class with 27 students	Class with 28 students	Class with 29 students	Class with 30 students
Africa	5%	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2
Asia	49%	7	8	8	9	10	10	10	11	11	12	12	13	13	14	14	15
Europe	21%	3	3	4	4	4	4	4	4	5	5	5	5	6	6	6	6
Latin America	7%	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2
North America	17%	3	3	3	3	3	3	4	4	4	4	5	5	5	5	5	5
Oceania	1%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	100%	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Source: https://www.dsw.org/landerdatenbank/

		NUMBER OF "CARS" PER CONTINENT															
CONTINENT	GHG EMISSIONS %	Class with 15 students	Class with 16 students	Class with 17 students	Class with 18 students	Class with 19 students	Class with 20 students	Class with 21 students	Class with 22 students	Class with 23 students	Class with 24 students	Class with 25 students	Class with 26 students	Class with 27 students	Class with 28 students	Class with 29 students	Class with 30 students
Africa	4%	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Asia	49%	7	8	8	9	9	10	10	11	11	12	12	13	14	14	15	15
Europe	16%	2	2	3	3	3	3	3	3	4	4	4	4	4	5	5	5
Latin America	12%	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	4
North America	18%	3	3	3	3	4	4	4	4	4	4	5	5	5	5	5	5
Oceania	1%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	100%	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Source: Our world in Data, based on UN “global carbon project” and World Bank. https://ourworldindata.org/co2-by-income-region

WORKSHEET D3.2



JIAO-LONG FROM CHINA

My name is Jiao-Long and I am ten years old. I live with my mum in a small apartment at the top of a forty-floor building, in the city of Shanghai. My mother says it is the second biggest city in the world in terms of inhabitants.

I love seeing all the lights from the buildings, the cars and the advertising screens in the great avenues of the city at night. I also love eating noodles with chicken! I wish I had a brother to play all my videogames with me. We could go together to the technology fair and it would be so much fun.

My mum has taken me to school every morning, since I was little. We take the Shanghai metro. I like riding the metro, but sometimes there are too many people and I feel squished. There are always lots of people everywhere in my city. Sometimes I wish there were less people, like in my grandpa's village, where I can run everywhere. My mum says there are more people every year in our city, because life is getting harder and harder in the countryside and people seek a better life in the city.

MAHLET FROM ETHIOPIA

My name is Mahlet. I'm thirteen years old and I live with my family in a small village in Northern Ethiopia. My sister's name is Shewit and my brother's name is Samuel. I enjoy school. My favourite subject is biology. I want to be a doctor when I grow up.

My family grows vegetables on our land. We grow maize, sorghum, potatoes and tomatoes. We eat these vegetables and then sell some at the market to earn money. We use this money to buy more seeds, books for school and things for our house.

When my father was a young boy, there was enough rain for the vegetables to grow. Now, there is not always enough rain for the crops to grow. My family and our neighbours are ready to sow, but the land is too dry. Together we are building an irrigation system. This is a long pipe that will bring water from a place far away. This will help the crops to grow.

ARIANNE FROM PHILIPPINES

My name is Arianne. I live in a house with my mother, father and younger brother. When I was little, we lived in a nice house just in front of the beach. I liked playing with the seashells and watching the baby turtles coming out of their eggs and walking towards the sea. I liked seeing from the window of our house my father arriving in his fishing boat after a long day at sea.

One day, at high tide, the water came further up the beach than usual and our house was flooded. I remember it was a very windy day. In the following months, this happened more and more regularly. We decided to move, and now we live in a new house a bit further away from the beach. It is built on stilts, so that it can avoid being flooded in the future. We feel much safer here.

I really like living near the beach and I hope we will not have to move even further inland in the future.

RORY FROM IRELAND

My name is Rory and I am eight years old. I live with my mummy, daddy and my brother Eoin in a small village. We drive to school in another small village near Downpatrick.

I like school and I really enjoy sports and music. I play Gaelic football for my local team. Because it rains a lot in Ireland, we often have to cancel training as it's too wet to play! Last spring the lane to our house got flooded as the river overflowed so we couldn't get in or out.

Most years we get some days off school because of heavy snow. Our country roads don't get gritted which means they are often too dangerous to drive on in the snow. I don't mind though as I get off school and we can go sledding down the hill beside our house. It's great fun.

We always build a snowman in the garden too. Last summer we went to Spain on our holidays as it was sunny and hot there. Sometimes I wish we had nicer weather here, but Mummy says Ireland wouldn't be known as the Emerald Isle then.

RENATA FROM CHILE

My name is Renata. I am nine years old and I live in Valparaíso with my mother, my brother, my sister and my dog, Gasparín. I don't see my father every day, because he works in the mines in the north of Chile. When he comes home a few weekends per year, he always brings candies for me and my siblings.

During summer holidays, we drive a long way in our car with our uncles and cousins to a really nice wood house in the countryside, near the mountains. Gasparín is also very happy because he can run a lot. My brother likes fishing with my uncle. My older sister doesn't come all the time, because she prefers staying in the city and going out with her friends or watching videos on the internet.

The old people that live in the mountains say that the mountain tops used to have snow that didn't melt in summer. Now I don't see that much snow.

WESTON FROM USA

My name is Weston and I am eleven years old. I live in Boston with my mom and dad and my twin sisters, Anna and Melissa. We live in a house in a nice neighbourhood where I have a lot of friends. My parents drive us to school every day.

I like playing baseball on the local team with my friends. We love going out to eat Mexican food at the big mall after our Saturday match. When we don't have a match, we stay home playing video games.

Every year I fly to California with my family for summer vacation. I love going to the beach there. We even tried surfing once with my sisters and then we had huge burgers at the beach restaurant! Last summer we visited Silicon Valley. It was so impressive! I wish I could work for one of those tech companies when I grow up.

I heard on the news last week that huge fires are ravaging Californian forests. It makes me sad to know this, I really like going to California on holidays!

"FORWARDS AND BACKWARDS" WITH CLIMATE CHANGE

Some people contribute more to climate change than others.
Some people are more vulnerable to climate change than others.
Think about your role (from **WORKSHEET D3.3**).

FIRST SET OF STATEMENTS

Take a step forward if your person's family:
→ travels in a car
→ flies abroad for a holiday
→ has money to buy enough food for all the family
→ eats meat as often as they want
→ has adapted because of climate change
→ has a government that could help them adapt to climate change
→ uses technology in their everyday life

SECOND SET OF STATEMENTS

Take a step backwards if your person's family:
→ relies on the food they grow to survive
→ is affected by flooding as sea levels rise
→ is affected by drought as temperatures rises
→ might go hungry if there is a drought
→ one day may not have enough freshwater to drink if glacier melting continues