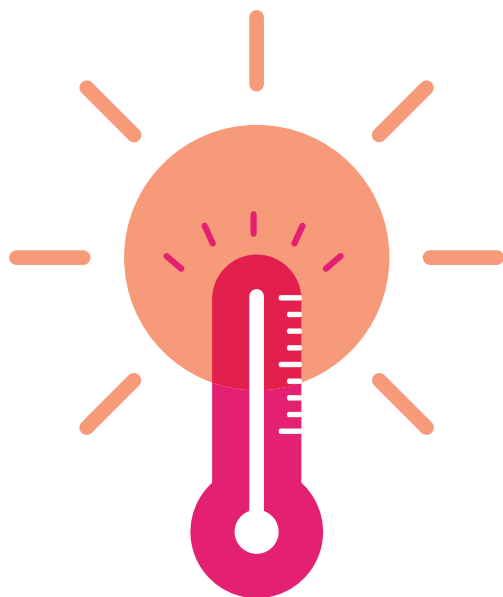


SCUOLA **Park**.it



**climate
change...**

how hot!

**PUPIL BROCHURE
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IDEE E PROGETTI PER LA SOSTENIBILITÀ

Climate Change

From the mid-20th century onwards, scientists realised that the climate was changing and was doing so too rapidly for it to be a natural change.

The cause of this rapid change was human beings who, since the Industrial Revolution in the mid-19th century, have released large quantities of greenhouse gases into the atmosphere.

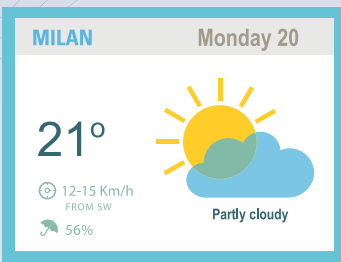


Climate vs weather

Let us begin with a necessary premise: **climate and weather are two very different concepts.**

WEATHER

Meteorological weather is a succession of atmospheric phenomena such as wind, cloud formations, precipitations, which have a very limited duration of hours or a few days. For example, we say that it is raining in Rome today and that a strong wind is blowing in Milan at this time.



CLIMATE

The word climate refers to the set of atmospheric conditions that characterise a certain place over a long period of time. The classical average period is 30 years. We can therefore say that at the poles there is a polar climate, while in Italy there is a mostly Mediterranean, temperate humid climate.

Why is the climate changing?

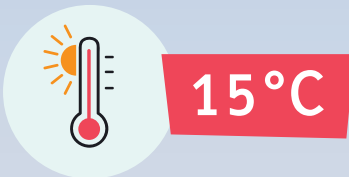
A phenomenon called **greenhouse effect** occurs on planet Earth: **greenhouse gases in the atmosphere trap the sun's rays, which are converted into heat, increasing the temperature.**

This is a positive phenomenon because it has allowed life to develop on our planet, because it allows for fairly constant average temperatures in summer and winter, day and night.



WITHOUT GREENHOUSE EFFECT

the average temperature on Earth would be a very cold -19°C .



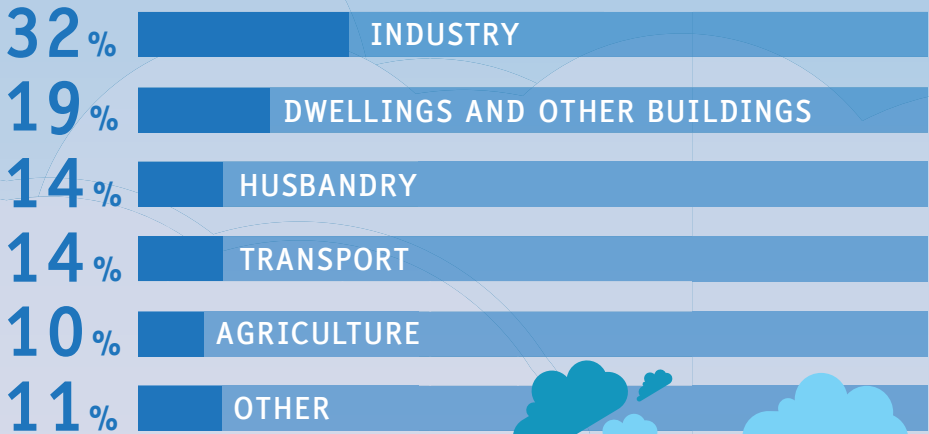
WITH GREENHOUSE EFFECT

the average temperature on Earth is 15°C .

The problems began when humans started producing too many greenhouse gases 150 years ago, breaking the balance that nature had created, raising the earth's temperature excessively and threatening the climate.

Carbon dioxide (CO₂), which is produced in all types of combustion (e.g. engines, heating, factories, etc.) is primarily responsible for climate change.

GREENHOUSE GASES BY SECTOR OF ORIGIN:



(IPCC Data Processing 2014)



What does climate change cause?

Due to the increase in greenhouse gases, the earth's average temperature has risen by about one degree Celsius since 1850.

If this rise in temperature continues, it will unleash a series of interlinked consequences that will threaten the survival on our planet of plants, animals and mankind itself.



IN THE AIR

Greater instability:

more impetuous and unpredictable weather events (e.g. severe storms, hurricanes, etc.)



AT SEA

More acidic oceans:

death of coral reefs and fewer fish to catch.

Ice melting:

the water level rises.



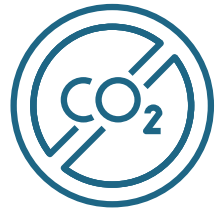
ON EARTH

Damage to agriculture and little fresh water available:

migration due to survival difficulties and conflicts



How can we improve the situation?



Scientists' recommendations to curb the situation:

HALVING

emissions of CO_2 BY 2030

ZERO

net emissions* of CO_2 BY 2050

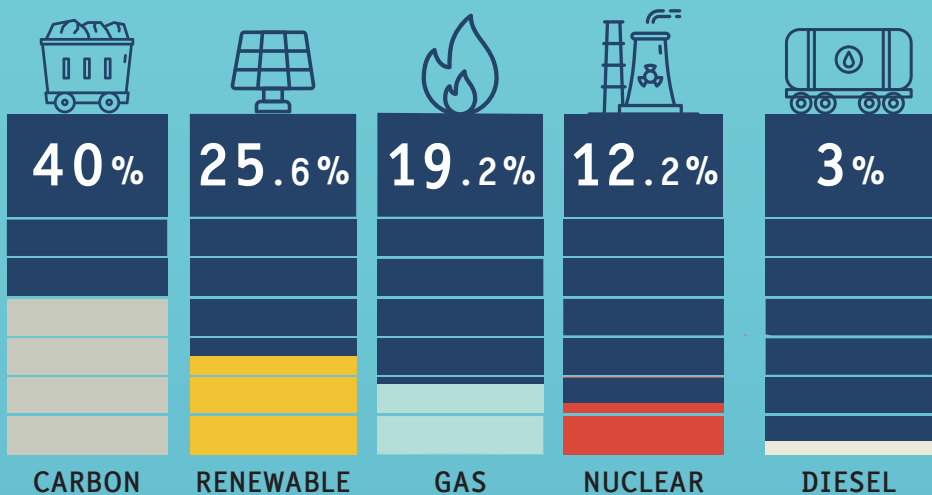
* Net emissions are the difference between the total amount produced and the amount removed by natural processes.

... and what
can we do?

1

CHANGING THE WAY WE PRODUCE ELECTRICITY

World electricity in 2018 comes from:



We must learn not to waste electricity through our behaviour and to boost renewable energy to cut emissions.

Source: Eia 2019

2

CHANGING THE WAY WE TRAVEL

Kg of CO₂ per 100g of protein obtained from:



BEEF

50



POULTRY

5.7



CHEESE

11



EGGS

4.2



PIG

7.6



PULSES

0.8



FARMED FISH

6



NUTS

0.3



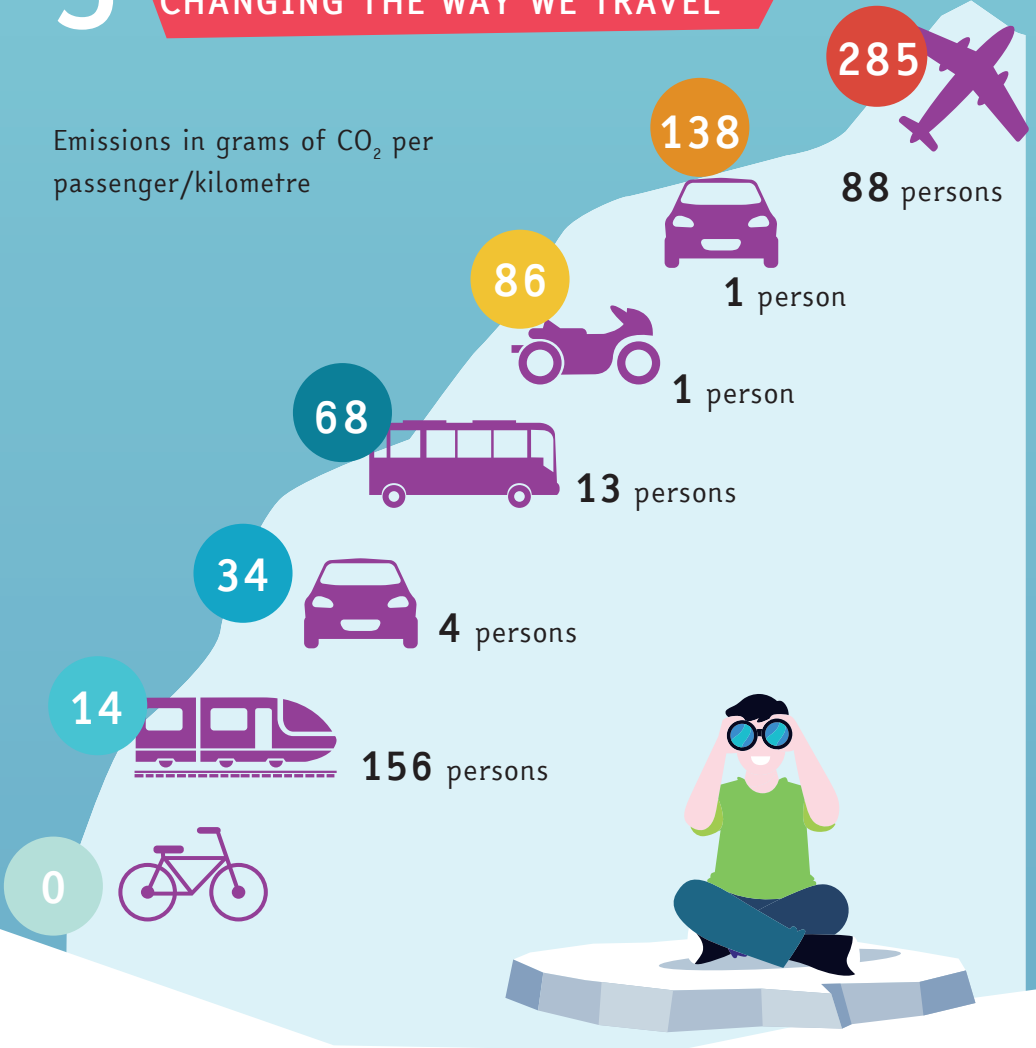
We must learn to consume local and seasonal food, preferably self-produced, in this way we avoid the CO₂ emissions required for their transport, freezing and packaging.

Source: Poore and Nemecek, Science 2018

3

CHANGING THE WAY WE TRAVEL

Emissions in grams of CO₂ per passenger/kilometre



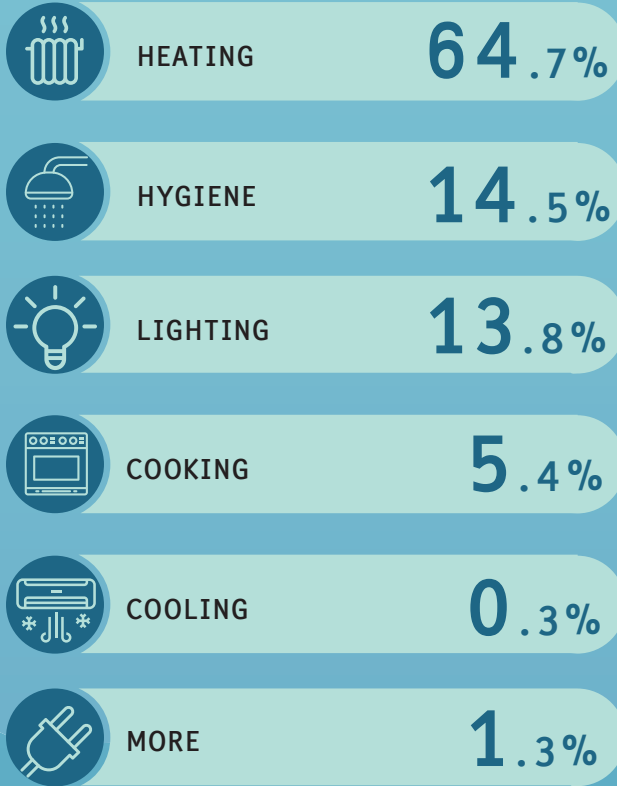
We must learn to walk or cycle for short distances, that way we do not pollute and stay fit! For longer journeys, however, we can travel together with other people by car sharing or use public transport.

Source: data processing Environment Commission Europe

4

CHANGING THE WAY WE BUILD CITIES

Energy consumption in the household (EU) is due to:



We must learn to build or renovate buildings according to sustainability criteria. In addition, we need to decrease the overbuilding of the land and expand the green territory in our cities: plants absorb carbon dioxide through chlorophyll photosynthesis.

Greta Thunberg

Greta Thunberg is a Swedish activist for sustainable development and against climate change. At the age of sixteen she started the School Strike for Climate in front of the Swedish parliament, which has become a global message involving hundreds of thousands of children around the world who follow her example on **#fridayforfuture**.

My name is Greta Thunberg. I am a Swedish climate activist.

When I was about eight years old, I first heard about something called climate change, or global warming. Apparently, it was something that human beings had produced by their way of life. We were told to turn off the lights to save energy, to recycle paper to preserve resources.

I remember thinking that it was very strange that human beings, who are one animal species among others, were able to change the earth's climate. Because that's how it was, if it was really happening. That was all they were supposed to talk about on television. On the radio, in the newspapers, on the front pages.

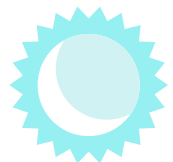
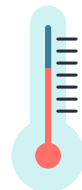
Practically nothing else should have been read or heard. Like a world war. Instead, no one talked about it.

If burning fossil fuels was harmful enough to threaten our very existence, how could we continue to do so? Why were there no restrictions? Why didn't they make it illegal?

It made no sense to me. It was too absurd.



Taken from
"Our house is on fire"
by Greta Thunberg





“


You are never
too small to make
a difference.

”

GRETA THUNBERG



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