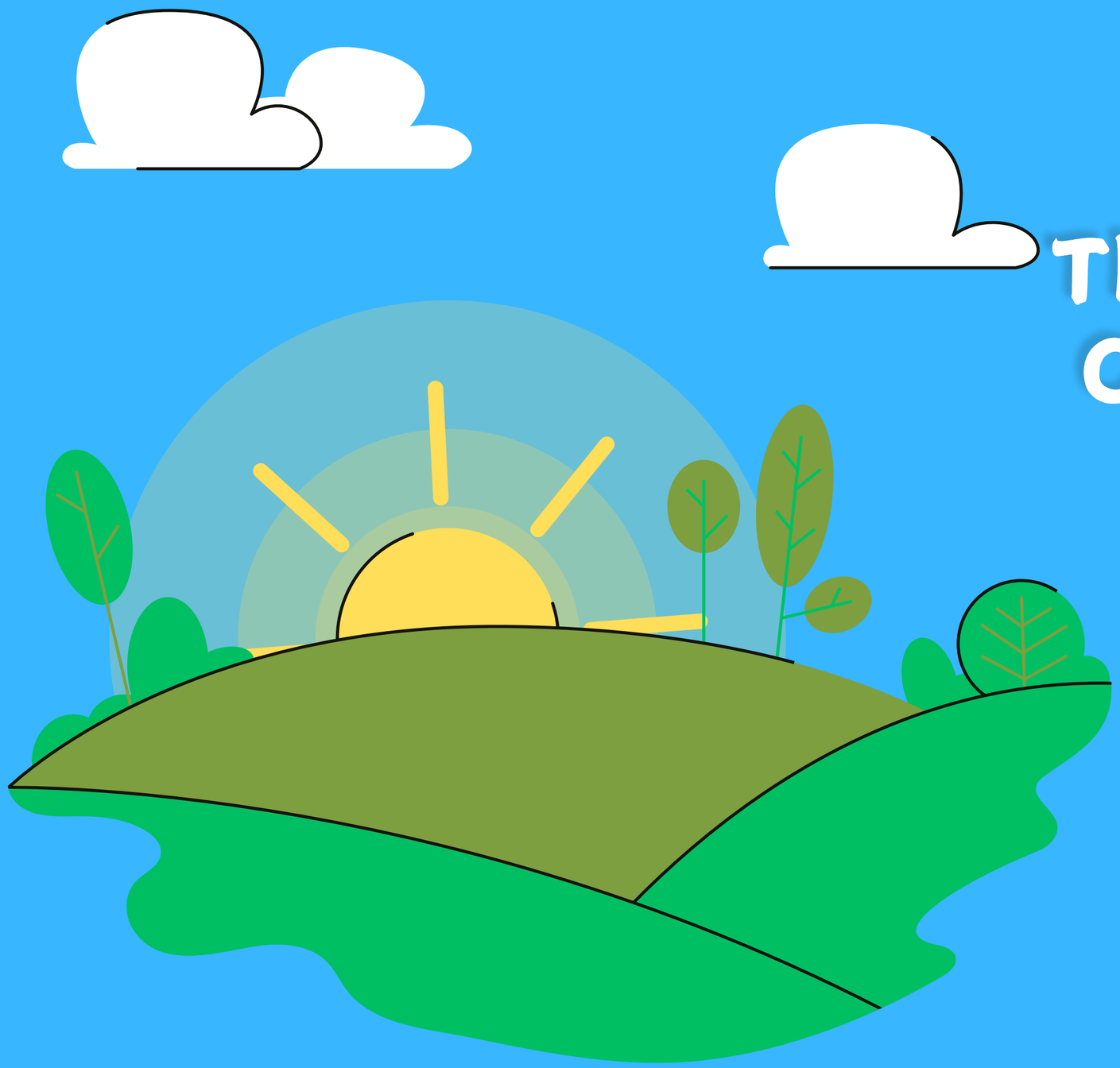


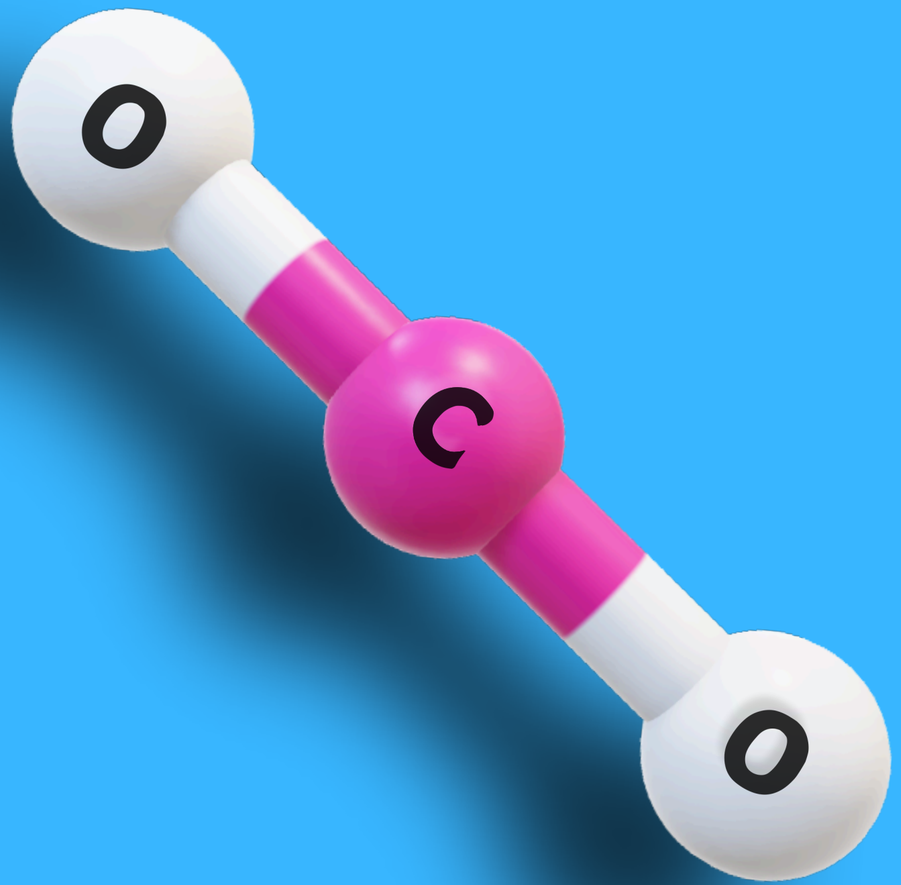
The consequences of CO_2 emissions on our planet

What is carbon dioxide?

Carbon dioxide (CO_2) is a colorless, odorless, non-flammable gas that occurs naturally in the atmosphere. It is produced by biological processes such as respiration and decomposition, as well as by the burning of fossil fuels and industrial activities.
It is essential for photosynthesis in plants, but the increase in its concentrations due to human activities contributes to global warming and climate change, as it acts as a greenhouse gas, trapping heat in the atmosphere.

The chemical composition of carbon dioxide

CO2, carbon dioxide or carbon dioxide/carbon dioxide is a molecule composed of one carbon atom and two oxygen atoms.
It is a colorless and odorless gas extremely important in many chemical processes.

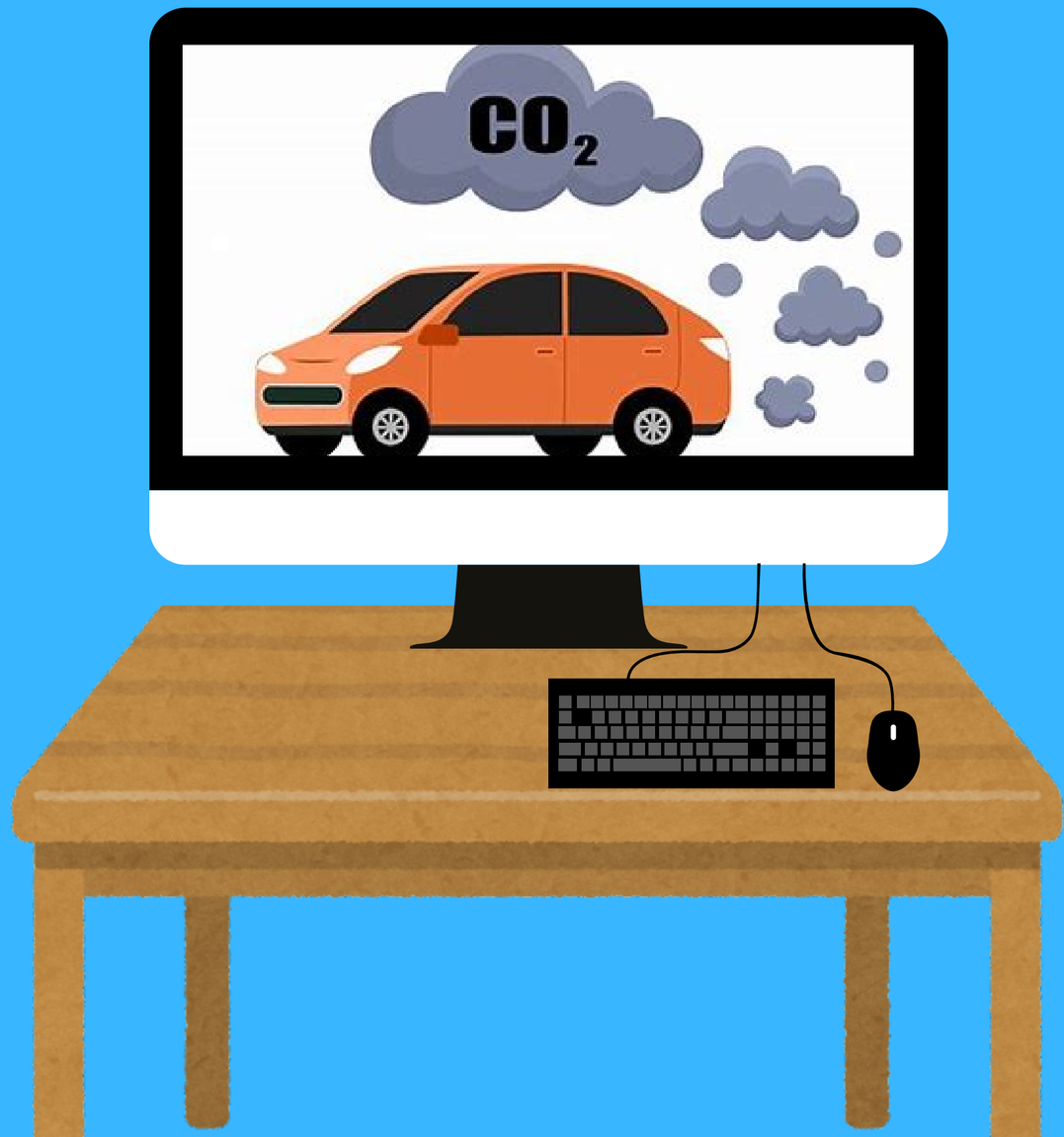


Property

It is a nonpolar molecule due to its symmetry;
CO2 reacts with water forming carbonic acid;
It can react with highly reactive metals producing metal oxides and releasing carbon

The sources of carbon dioxide

The sources of carbon dioxide are divided into 2 parts:
1) natural sources that come from the respiration of living beings, from the decomposition of matter and from volcanic eruptions;
2) anthropogenic sources that come from the use of oil, from deforestation that causes the absorption of CO2 and from the emission of CO2 through vehicles.

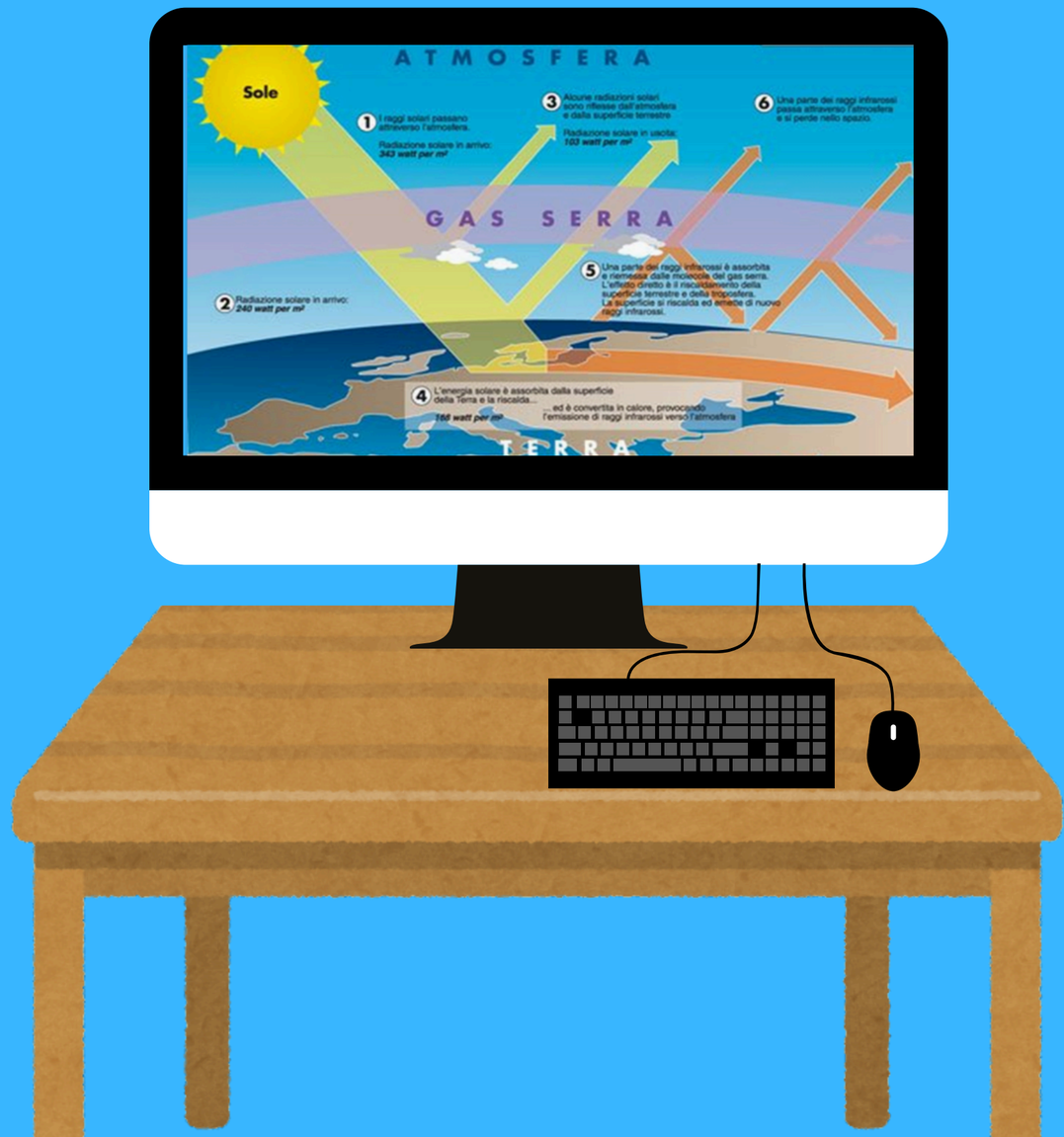


The role of carbon dioxide in the environment

1)Carbon dioxide is a fundamental component of the carbon cycle, a global system that involves all spheres of the earth.
For example, CO2 is emitted through processes such as respiration, organic decomposition and volcanic activity.
2)Carbon dioxide is also a major contributor to global warming as it is the main greenhouse gas.

What is the greenjouse effect?

The greenhouse effect is a natural phenomenon that warms the Earth by retaining heat from the sun thanks to the presence of greenhouse gases in the atmosphere.
These gases absorb and reflect infrared radiation, preventing some of the heat from escaping into space.
Although the greenhouse effect is essential to maintaining a livable temperature on Earth, the increase in greenhouse gases due to human activities is causing global warming, with negative impacts on the climate.

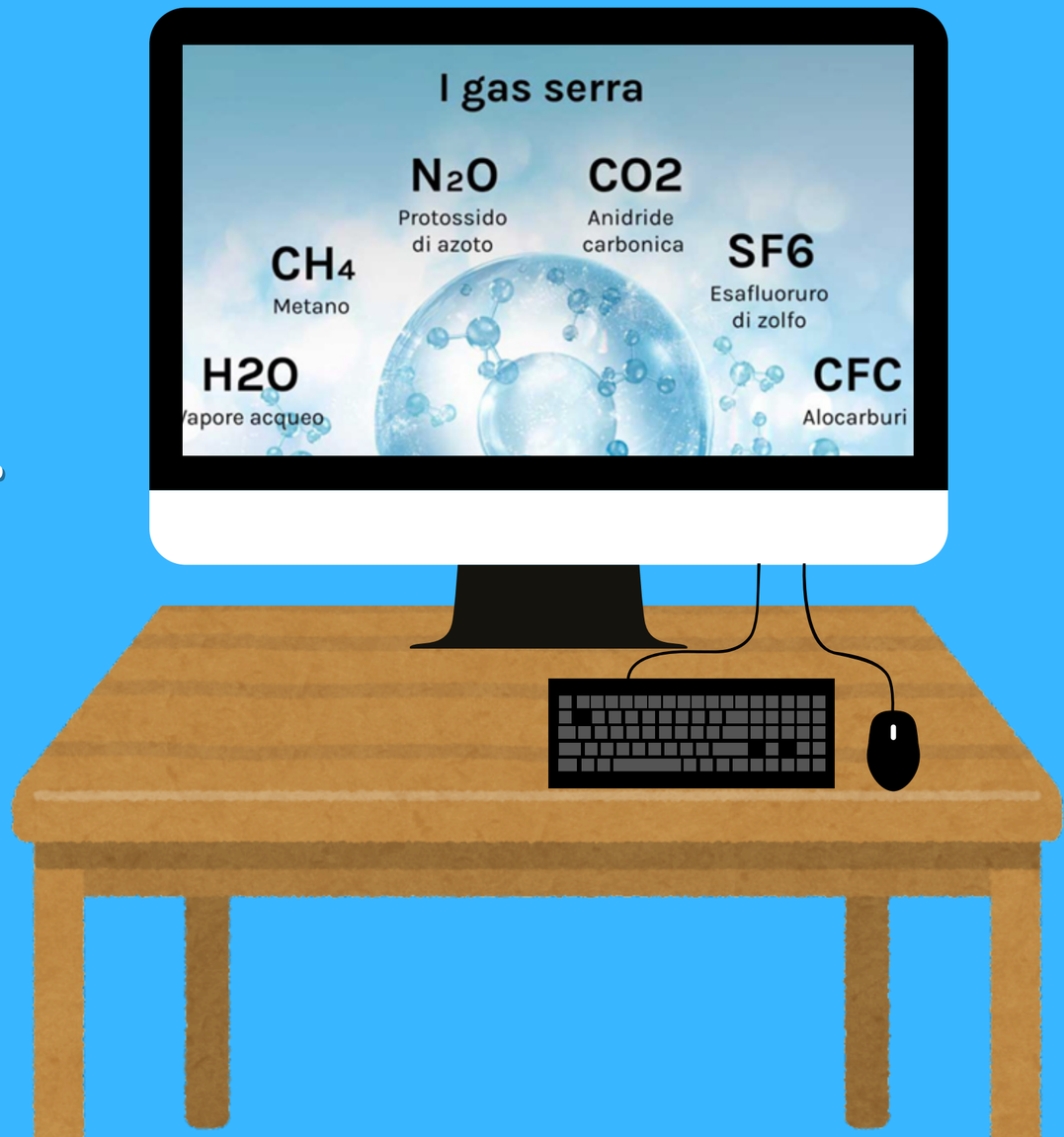


The main greenhouse gases

Carbon dioxide is the main greenhouse gas, but it is not the only one.

- CO_2 represents about 76% of greenhouse gas emissions from human activities.
- Among the other main greenhouse gases, methane contributes 16%, while nitrous oxide and fluorinated gases together constitute 8%.

The combined action of these gases is responsible for climate change, making it urgent to reduce emissions, transition to renewable energy sources and manage resources more sustainably

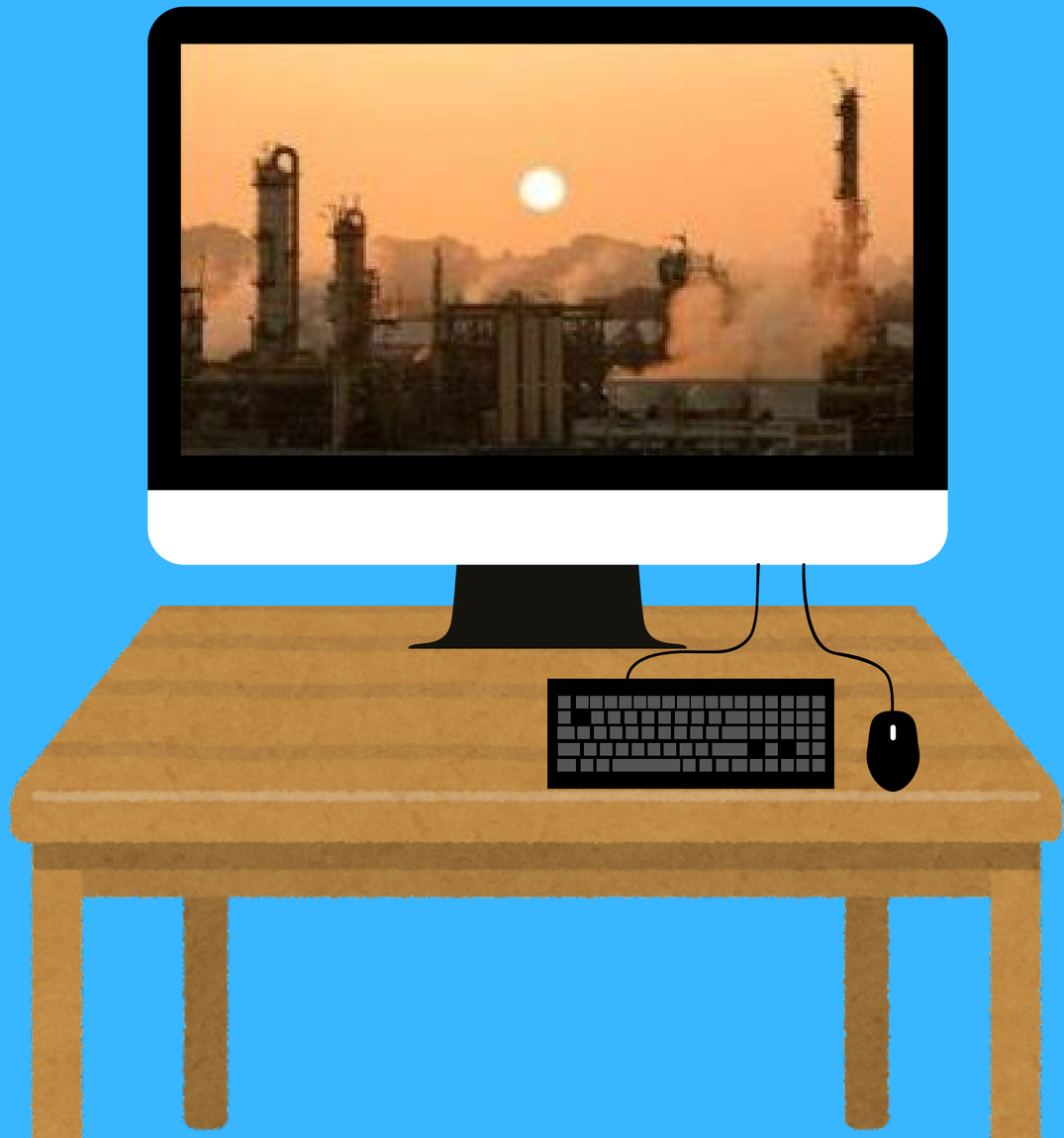


How CO2 Affects Earth's Climate

Carbon dioxide is a greenhouse gas that traps heat in the atmosphere. Due to human activities, such as burning fossil fuels, the concentration of CO_2 has increased, intensifying the greenhouse effect and causing global warming. This leads to changes in climate, such as rising sea levels and extreme weather events.

Human activities that increase CO2 emissions

L'uso dei combustibili fossili, l'abbattimento delle foreste e l'allevamento del bestiame hanno un impatto sempre più forte sul clima e sulla temperatura del pianeta. Queste attività aggiungono enormi quantità di gas serra a quelle naturalmente presenti nell'atmosfera, alimentando l'effetto serra e il riscaldamento globale.

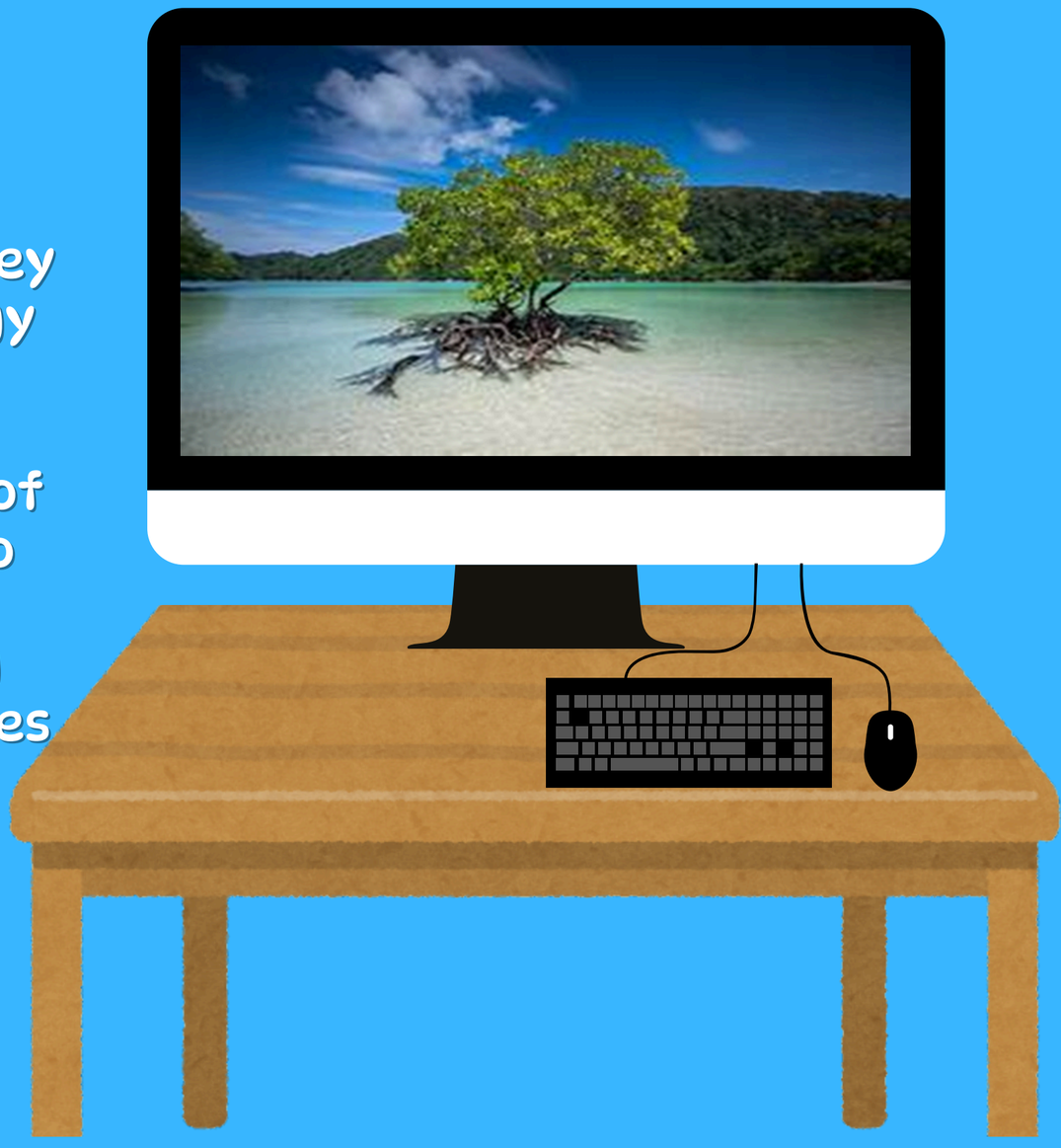


Le conseguenze delle concentrazioni di CO^2

- Global warming: Rising average temperatures
- Melting glaciers: Rising sea levels
- Ocean acidification: Damage to marine ecosystems
- Extreme weather: More frequent heatwaves, storms, droughts, and floods

solutions to reduce CO2 emissions

On the negative emissions technology front, several startups are designing very powerful purifiers to try to capture the twenty billion tons of excess carbon dioxide. The main problem with these projects, however, is that they currently involve very high costs. In essence, global energy conversion in favor of renewable energy: photovoltaic, wind, geothermal, etc., costs much less in exchange for more immediate results. While waiting for the resolution of the problems associated with the first two options, due to the high costs of capturing and storing carbon dioxide on land, to reduce the CO2 already present in the air we need to increase the green areas of the planet, by planting trees and safeguarding terrestrial and oceanic forests.



international policies to address climate change

Climate issues are managed by an organization called UNFCCC (United Nations Framework
Concertion on Climate Change) born on 12 December 2015.
The EU countries have committed to fight climate change by moving to
a climate-neutral economy, with zero net greenhouse gas emissions by 2050.

What are the economic and social implications of climate change?

- Damage to productive sectors
- Rising costs for protection and prevention
- Rising economic inequalities
- Rising health costs
- Forced migration
- Social inequality
- Conflict and insecurity

How can people contribute to the fight against climate change?

To reduce the presence of carbon dioxide, you need to recycle all the waste that is produced inside the home or reduce the consumption of goods; invest in renewable sources by choosing to install photovoltaic panels or other low environmental impact systems; reduce the consumption of household appliances and running water.

Final reflections

Climate change is the challenge of our time. Addressing it requires a collective commitment that involves all sectors of society: from politics to industry, from scientific research to active citizens. Today's actions will determine the future of our planet, and the response must be as urgent as it is radical

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THANK YOU

Andrea Panepinto
Davide Pallavicino
Marco Perrone
Federico Monti
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Andrea Bugianishvili
Francesco Minardi