AN ILLUSTRATED GUIDE TO CLIMATE POLLUTION

in six simple steps

MOMS clean air FORCE with Ilissa Ocko
The atmosphere is surprisingly thin. “Space” begins about 300 miles from Earth’s surface, which is where the blue coating around the Earth in this picture ends.

The lowest five to ten miles of the atmosphere is where weather forms and planes fly.

If our planet was an apple, this ‘weather’ layer would be one-third the thickness of the apple skin.

A person could run to the top of this ‘weather’ layer and back (20 miles at most) in less time than it takes to run a marathon (26.2 miles).
The atmosphere is Earth’s blanket.

The atmosphere is naturally filled with gas molecules. Gases with asymmetrical structures absorb low-energy heat because they bend, stretch, or rotate. These gases trap heat in the Earth and keep us warm like a blanket.

These gases include water vapor (H₂O), carbon dioxide (CO₂), methane (CH₄), ozone (O₃), and nitrous oxide (N₂O).

Without these gases, Earth would be 60°F cooler—frozen and uninhabitable.

Gases are mostly unaffected by high-energy sunlight. Earth cools off by emitting low-energy heat into space.
Human activities—such as burning coal for electricity—are increasing the amount of heat-trapping gases in the atmosphere, thickening the Earth’s blanket. Some gases, such as CO$_2$, can remain in the atmosphere for over a thousand years. CO$_2$, CH$_4$, and N$_2$O concentrations have increased by about 40%, 150%, and 20% since preindustrial times.
Unnatural warming is changing the climate with consequences

**Unnatural Overdose of Greenhouse Effect**
- Human activities are emitting large amounts of heat-trapping gases into the atmosphere.
- Some gases, such as methane, break down to create even more greenhouse gases.

**Warming Planet and Moist Atmosphere**
- Extra heat warms air and ocean
- Warmer air holds more moisture
- Warmer ocean evaporates more water

**Changing Climate Conditions**
- Snow and ice melting
- Sea level rising
- Hot days increasing
- Flooding intensifying

**Human Society and Natural World Impacts**
- Death, illness from extremes, insects, air quality
- Water resources in jeopardy
- Powerful, damaging storms
- Extremes, insects threaten crops and livestock
- Old infrastructure can be damaged by extreme weather
- Intense, long droughts
- Dryness fuels wildfires
- Animals threatened by heat and water scarcity
But hasn’t the climate changed in the past, before humans?

Higher temperatures, more CO2 in atmosphere, a warmer ocean and melting ice release CO2 into the atmosphere. CO2 prevents heat from escaping to space. Both natural and human factors can trigger the initiation of a feedback loop that increases global temperatures.

- Volcanic eruptions
- Solar activity
- Earth’s orbital changes
- Natural variability
- Electricity generation
- Cutting/burning down forests

Scientists use instruments that chemically separate the kinds of carbon found in fossil fuels from those in air and water. Scientists can therefore detect that the increasing CO₂ today is from human sources.
This means we can do something about it!

Climate change is a global problem because emissions come from all levels and the pollution can last for hundreds of years.

To reduce emissions of heat-trapping gases, individual actions are not enough. We also need visionary action from local, state, and national governments, and unprecedented international cooperation.

Many different actions, policies, and technologies are needed to solve climate change.

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SOLUTION
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CONSERVE
FORESTS

POLITICAL

ECONOMIC

BEHAVIORAL

STRUCTURAL

TECHNOLOGICAL

CONSERVE
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Many different actions, policies, and technologies are needed to solve climate change.
Moms Clean Air Force is a community of moms and dads united against air pollution – including the urgent crisis of our changing climate – to protect our children’s health.

We arm members with reliable information and solutions through online resources, articles, action tools, and on-the-ground events.

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