



WHAT are POLLUTION, SMOKE, smog, and more...





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India +91 • Delhi (0)11
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Content Development: Richa Sharma

Publishing Head: Anupama Jauhry

Editorial and Production Teams: Pallavi Sah, Vidya Subramanian;
Aman Sachdeva, Mahfooz Alam

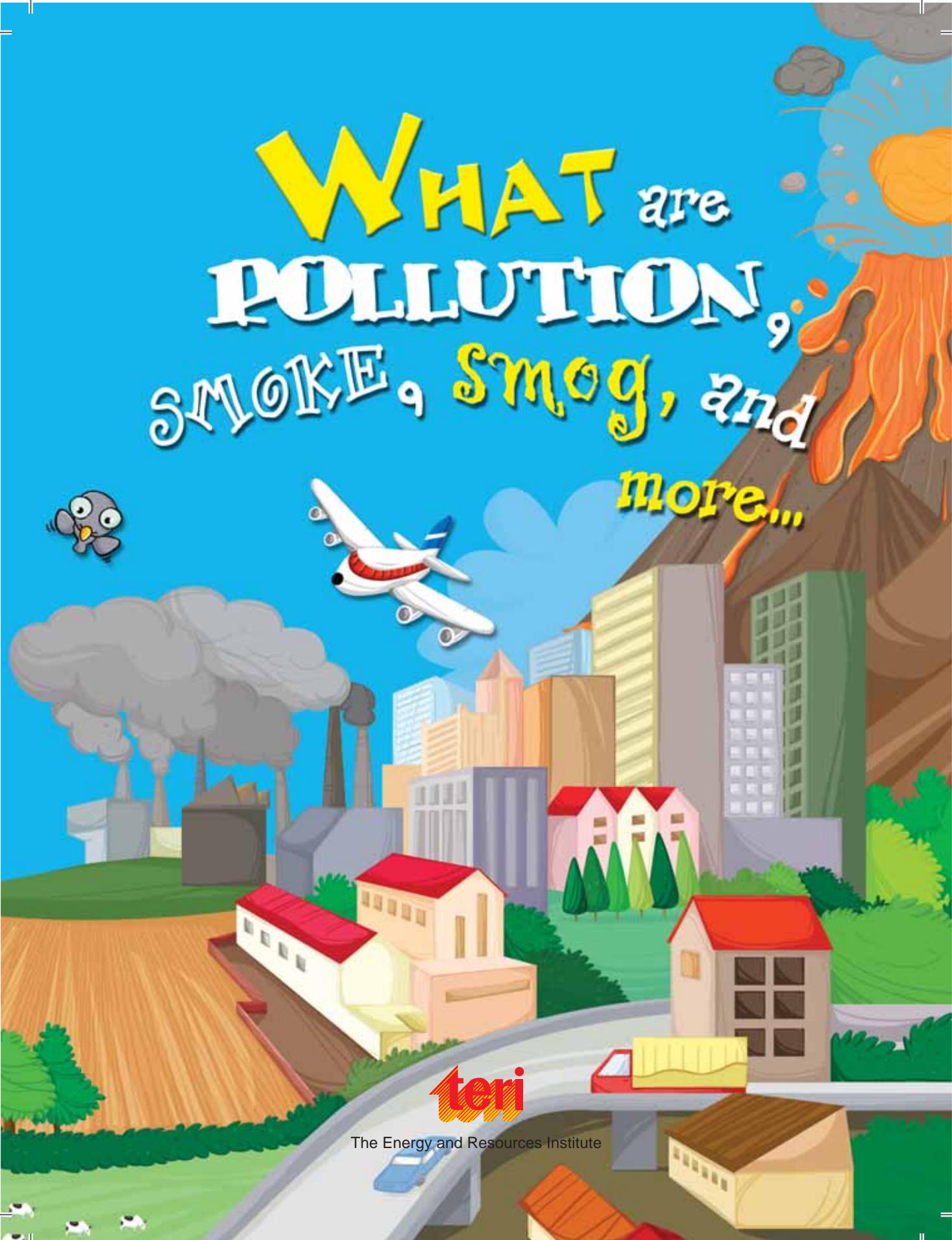
Technical Review: Shazneen Gazdar

Design and Illustration Teams: Priyabrata Roy Chowdhury;
Rajesh Das, Yatindra Kumar and Vijay Nipane

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The Energy and Resources Institute

IT'S IN THE AIR



Simply put, “pollution” means dirtying the surroundings around us. And anything that dirties any part of the environment—air, water, soil, and so on—is known as a “pollutant”.

What is air pollution?

The dirtying of air is known as air pollution. Fumes and smoke from factories and cars dirty the air and cause “outdoor” air pollution. Many natural events such as forest fires and volcanic eruptions, which throw ash, soot, and harmful gases into the atmosphere, can also pollute air.

Indoor air pollution

The air inside our homes is not that clean either. Burning wood, dung or coal for cooking or heating can cause indoor pollution and harm living beings. Even building materials such as asbestos and lead can pollute the air indoors and make people ill.

Aerosol sprays can cause indoor air pollution.



Reducing air pollution

To reduce air pollution, people need to know how harmful it can be. The next step is to learn about clean technologies, the use of which can help reduce the amount of poisonous gases in the atmosphere.

It isn't very hard to control air pollution if we all try!

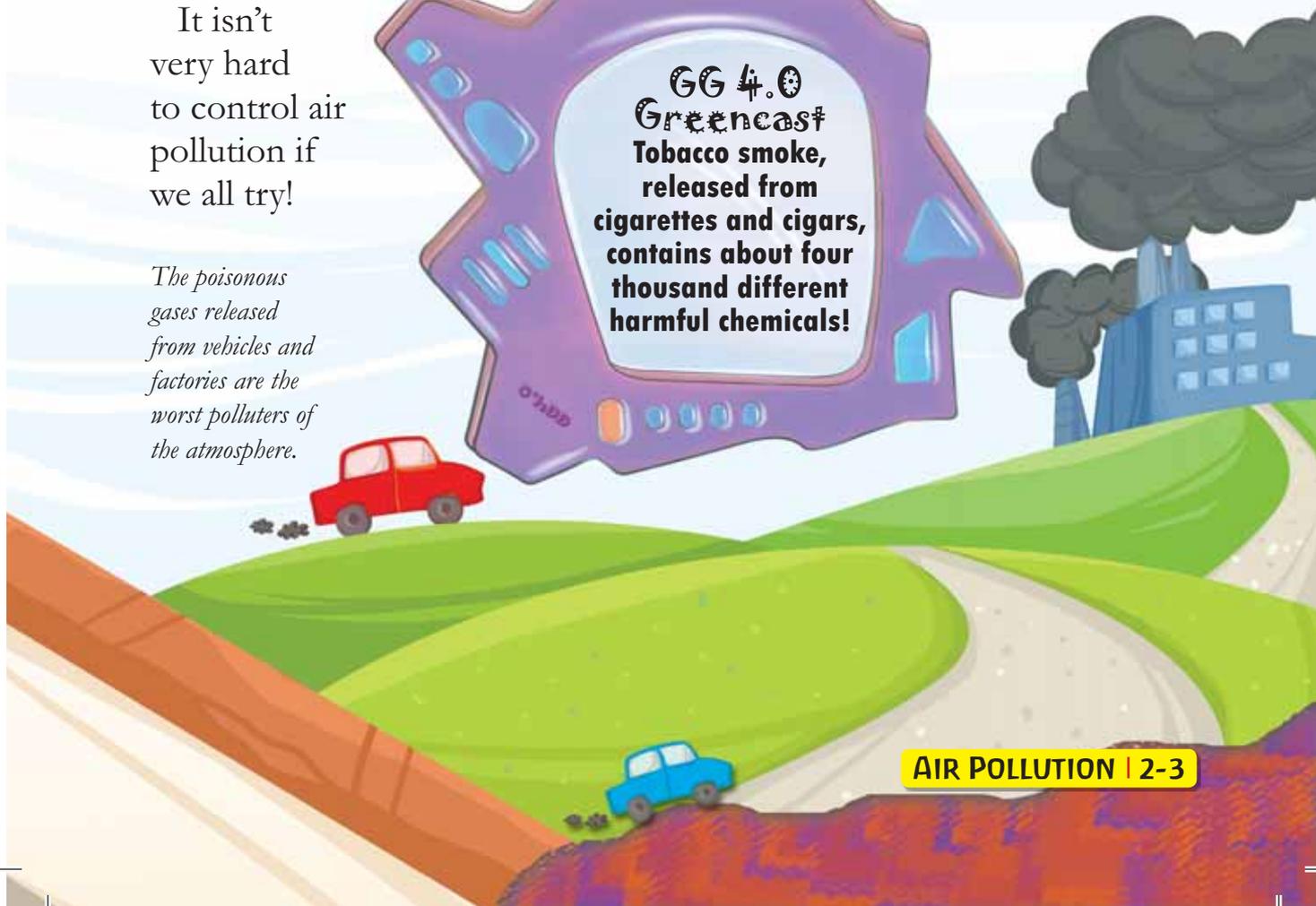
The poisonous gases released from vehicles and factories are the worst polluters of the atmosphere.



Even the cozy fireplace dirties the air indoors.



**GG 4.0
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Tobacco smoke,
released from
cigarettes and cigars,
contains about four
thousand different
harmful chemicals!**



WHAT'S THAT YOU'RE BREATHING?

Every time we breathe, we inhale something more than air. This “something more” could be soil, dust, pollens, moulds, ash, soot, aerosols (solid particles present in the air), and liquid droplets. Called particulate matter, these particles may be as big as grains of sand and dirt or may be tiny specks that can only be seen under a microscope.



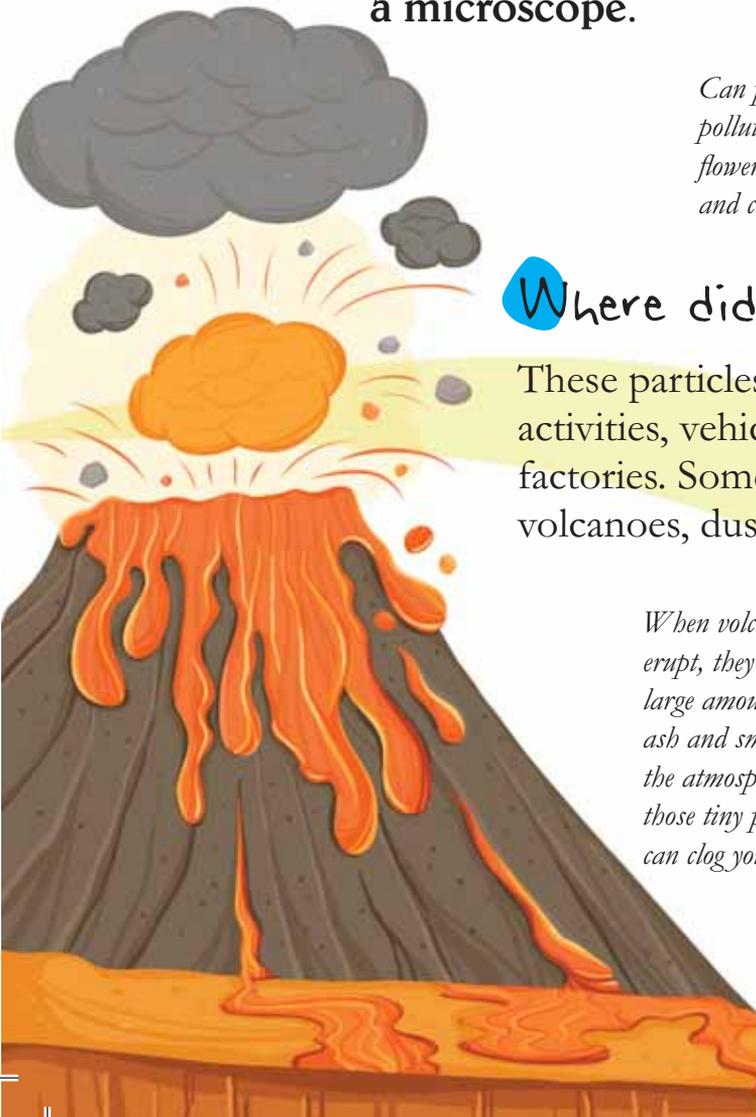
Can pretty flowers add to pollution? Yes, pollen from flowers can pollute the air and cause allergies!

Where did it come from?

These particles can come from agricultural activities, vehicle fumes, and smoke from factories. Some also occur naturally—from volcanoes, dust storms, forest fires, and sea sprays.

When volcanoes erupt, they spew large amounts of ash and smoke into the atmosphere. All those tiny particles can clog your lungs!

The use of coal is harmful for the environment.



How black is our air?

Black carbon pollution results when tiny particles of carbon are released into the air. These particles are formed when factories and cars burn fossil fuels, such as petroleum, coal, and natural gas. Often, poisonous gases attach themselves to these particles. These tiny carbon particles laden with poisonous gases enter our lungs and make us ill.

Forest fires cause breathing problems in animals too.

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Fumes from vehicles contain fine particles that measure less than 2.5 microns in diameter (a human hair is about 75 microns in diameter!). These cause the maximum harm to the lungs.

OF GREENHOUSES AND GASES

A greenhouse is a small enclosure made of glass that is used to grow plants, especially in winters. It lets the light in and keeps the heat from escaping. This provides warmth to the plants inside the greenhouse.

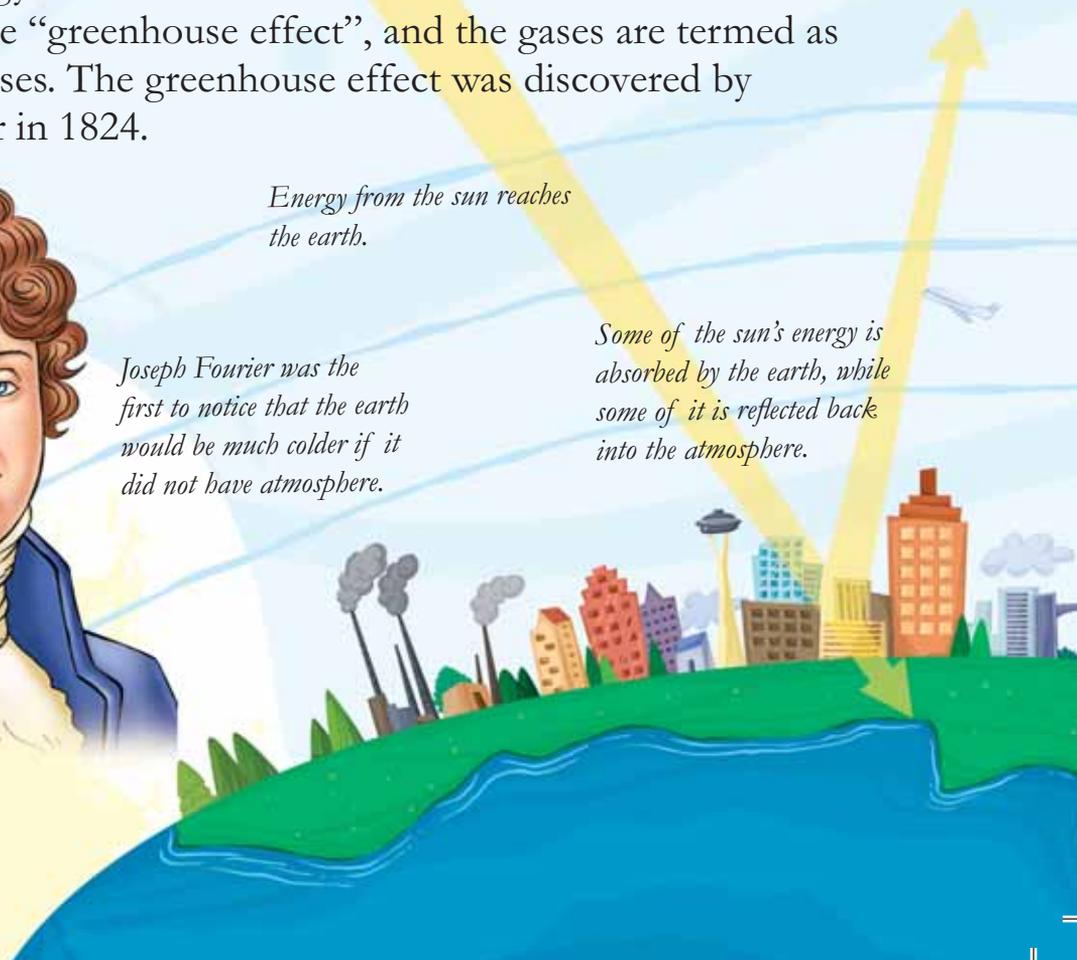
The earth is a greenhouse!

The earth also behaves like a greenhouse. It absorbs some of the sun's energy and emits back some of it. Certain gases, like water vapour, carbon dioxide, nitrous oxide, and methane, present in the atmosphere (the blanket of air that surrounds the earth) trap this outgoing energy and reflect it as heat towards the earth. This effect is known as the "greenhouse effect", and the gases are termed as greenhouse gases. The greenhouse effect was discovered by Joseph Fourier in 1824.

Energy from the sun reaches the earth.

Joseph Fourier was the first to notice that the earth would be much colder if it did not have atmosphere.

Some of the sun's energy is absorbed by the earth, while some of it is reflected back into the atmosphere.



What use is it?

Greenhouse gases help keep the earth warm. If it were not for these gases, the earth would be bitterly cold and unfit to live on!

Some human activities are causing the amount of greenhouse gases in the atmosphere to go up. This increase is leading to global warming, because of which polar ice caps are melting and sea levels are rising. This change in the normal pattern of climate is called 'climate change'.

Carbon dioxide, carbon monoxide, and nitrous oxide are some of the greenhouse gases present in the atmosphere.



Greenhouses are places where plants are grown.

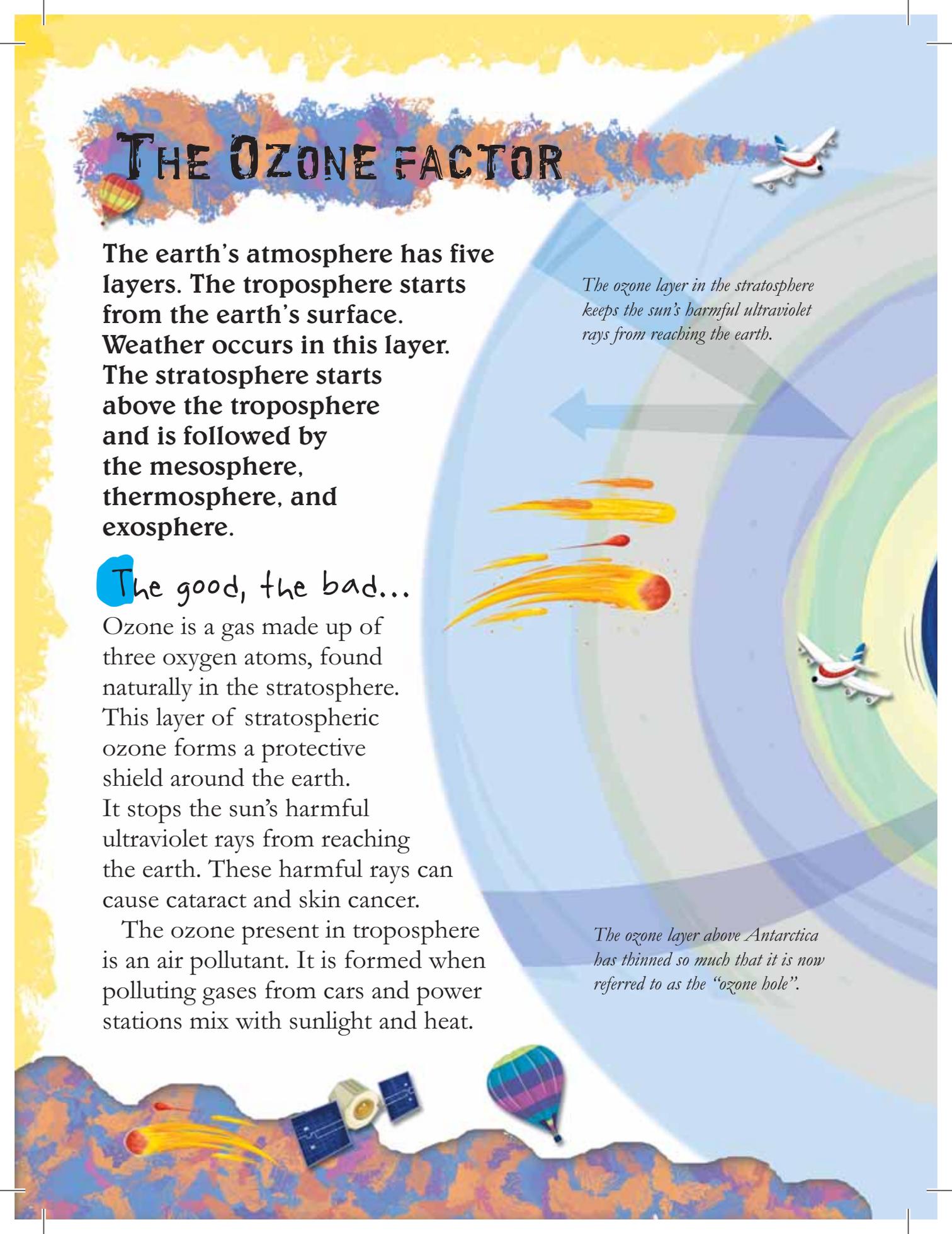


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Ruminant cattle can produce 250–500 litres of methane—a greenhouse gas—every day, mostly through belching.

THE OZONE FACTOR



The earth's atmosphere has five layers. The troposphere starts from the earth's surface. Weather occurs in this layer. The stratosphere starts above the troposphere and is followed by the mesosphere, thermosphere, and exosphere.

The good, the bad...

Ozone is a gas made up of three oxygen atoms, found naturally in the stratosphere. This layer of stratospheric ozone forms a protective shield around the earth. It stops the sun's harmful ultraviolet rays from reaching the earth. These harmful rays can cause cataract and skin cancer.

The ozone present in troposphere is an air pollutant. It is formed when polluting gases from cars and power stations mix with sunlight and heat.

The ozone layer in the stratosphere keeps the sun's harmful ultraviolet rays from reaching the earth.

The ozone layer above Antarctica has thinned so much that it is now referred to as the "ozone hole".

Green Genius Guide : What are Pollution, Smoke, Smog, and more



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Author : **Richa Sharma**

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