

Isn't carbon dioxide the only cause of global warming?

# Prof. Ramanathan's Fun School

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2000  
**CO<sub>2</sub>**  
HFCs

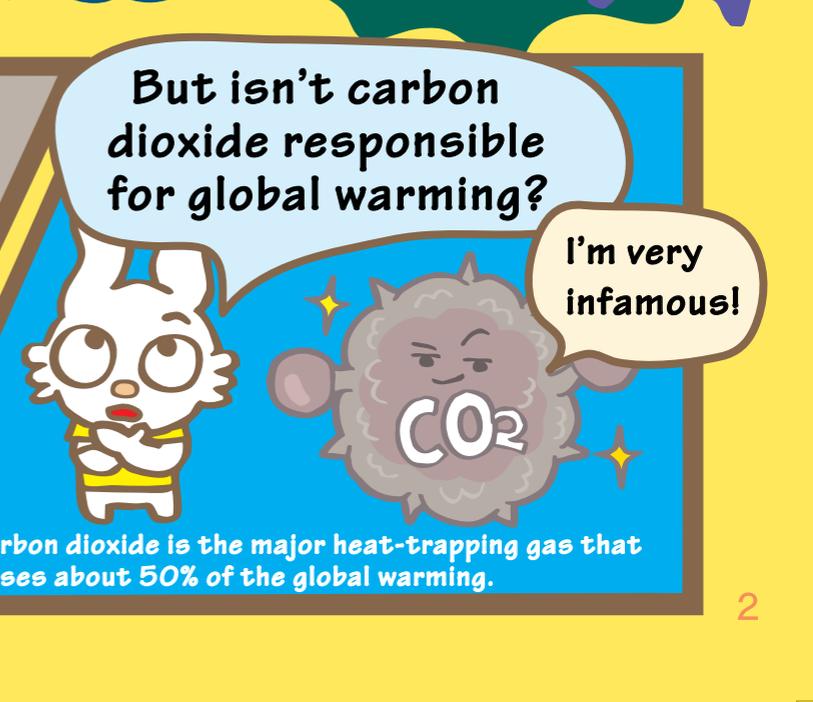
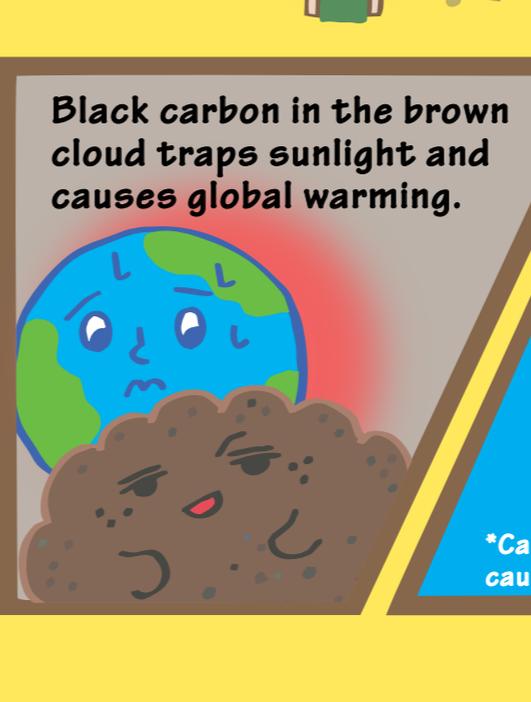
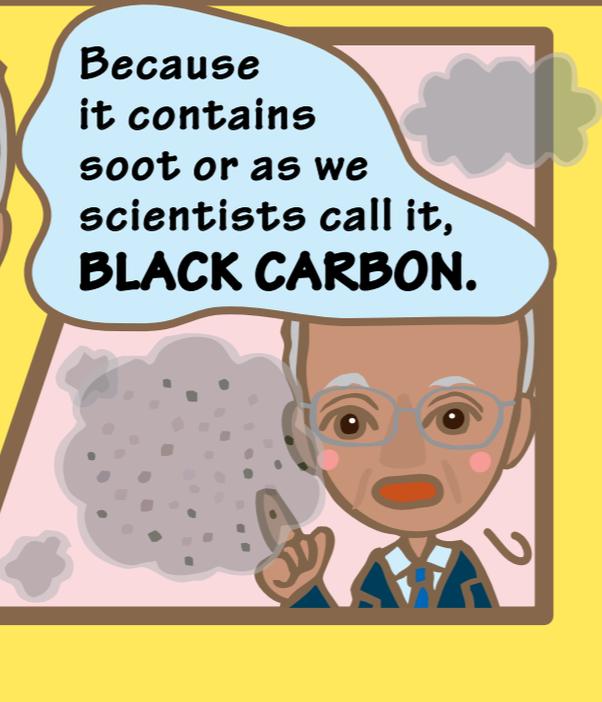
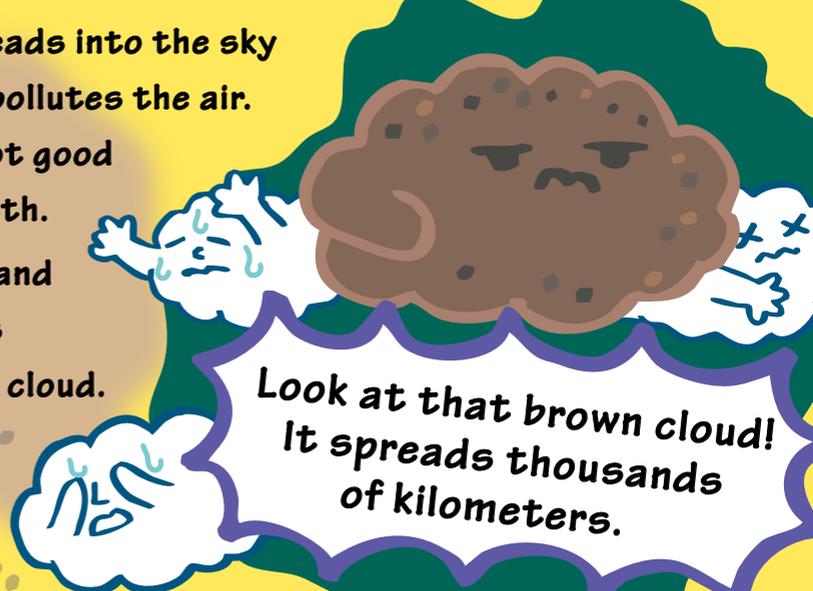
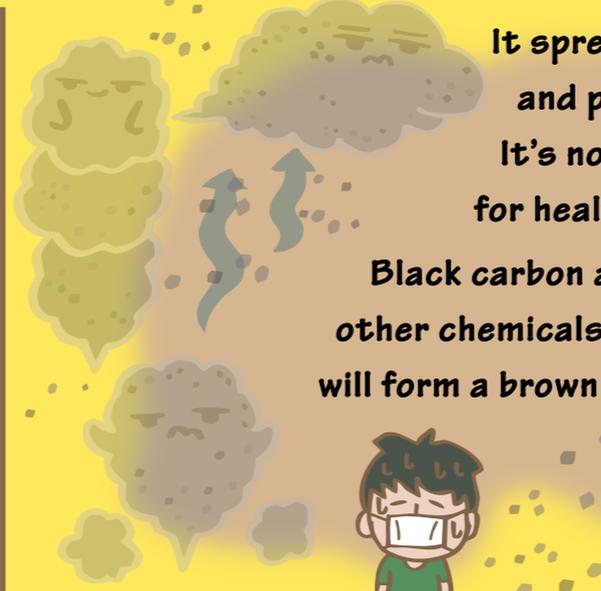
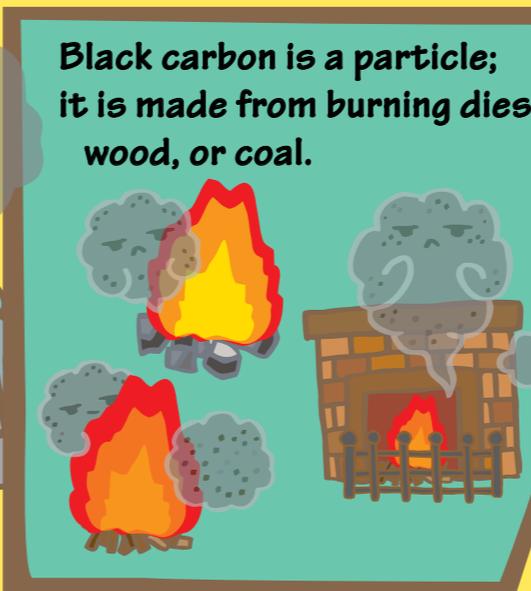
Hydrofluorocarbons  
about 10 years

**O<sub>3</sub>**  
ozone  
A few months

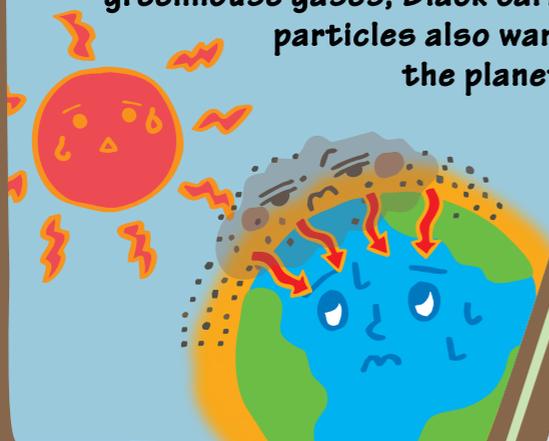
**CH<sub>4</sub>**  
methane  
about 10 years

**black carbon**  
about 2 weeks

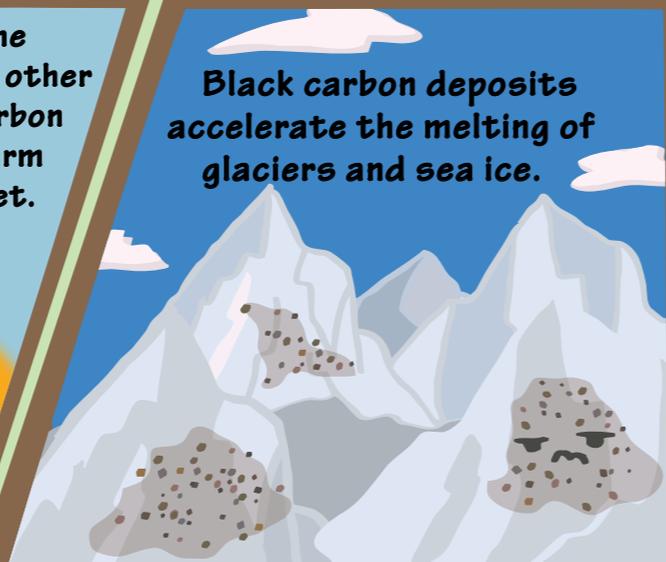




Actually, carbon dioxide isn't the only greenhouse gas. There are other greenhouse gases; Black carbon particles also warm the planet.



Black carbon deposits accelerate the melting of glaciers and sea ice.



Besides carbon dioxide, there are other greenhouse gasses. Greenhouse gasses cover the earth like a blanket, trapping heat from the ground.

sleeping peacefully



You need a blanket, but it's too hot if you put too many on.

cannot rest



A bit of greenhouse gas is necessary, but not too much.



What are the other greenhouse gasses?



Firstly, **METHANE**.

Methane is emitted from food waste in landfills and leaky pipes carrying natural gas; it is also contained in burps from cows.



Ta-da!

The next one is **HYDROFLUOROCARBONS** or **HFCs**.

They are used in refrigerators and air conditioners. HFCs are emitted when you use a spray can.



Lastly, **OZONE**.

Ozone is produced in reactions involving pollutants in waste gas from factories and cars.



HFCs, methane, ozone, and black carbon have much greater global warming potential than carbon dioxide.



HFCs are

**2000**

times more potent.  
Diesel Black carbon is 1000 times more.

**Boom!**  
**HFCs**

But these ones have shorter lifetimes than carbon dioxide.



Black carbon

about 2 weeks



Ozone

a few months



Methane

about 10 years



HFCs

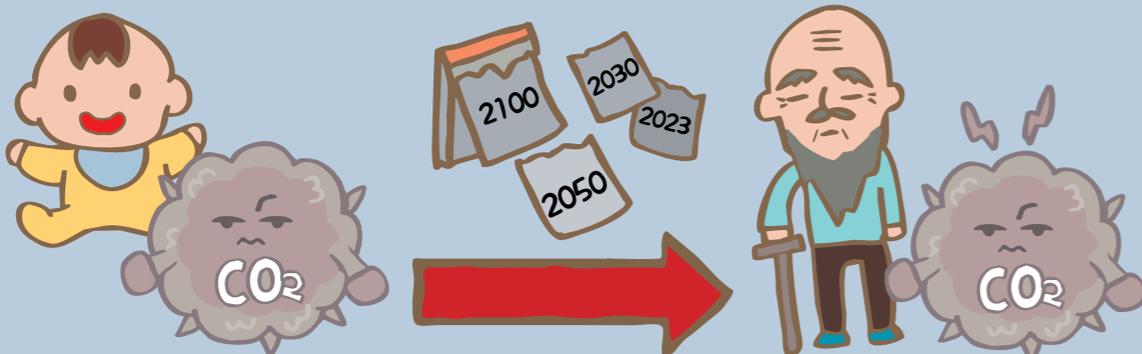
about 10 years

If all diesel vehicles in the world were fitted with filters, black carbon would not be released into the air.



Then, black carbon would soon disappear from air pollution. Millions of lives lost to air pollution would have been saved.

One more thing. Carbon dioxide lingers on in the air for 100-1000 years; it does not decrease quickly.



By reducing potent but short-lived pollutants in the air, we can slow down the rate of global warming quickly within the next 20 years.



Can I do anything to help solve global warming?

For instance, methane is produced when food goes bad. So, you can reduce methane emission by reducing food waste and converting it to compost instead of throwing it into the landfill.

Because air circulates around the world greenhouse gasses emitted in your country could affect the climate of other countries far away.

The sooner we act, the better. Cutting emissions of these pollutants would quickly reduce warming and save millions of lives.

Environmental Doomsday Clock

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