

Card	Gases Present in the Atmosphere (and percentage, if listed)	Important Date and Event
<del>A</del> B	hydrogen, helium (nuclear fusion)	Earth formed > 4.5 bya
<del>B</del> E	Water vapor CO <sub>2</sub> Nitrogen Sulfur Dioxide	Erupting volcanoes
C	70% CO <sub>2</sub> 30% N <sub>2</sub>	Water condensed into liquid on Earth's surface (oceans)
<del>D</del> H	20% CO <sub>2</sub>	Oceans absorbed CO <sub>2</sub> 3.5 bya
<del>E</del> G	15% CO <sub>2</sub> 21% O <sub>2</sub>	Living things produce O <sub>2</sub> 2-3 bya (photosynthesis)
<del>A</del> D	21% O <sub>2</sub>	land plants produce O <sub>2</sub> 400-500 mya
<del>G</del> A	78% Nitrogen 21% Oxygen 2% CO <sub>2</sub>	modern atmosphere
<del>M</del> F	0.0377% CO <sub>2</sub>	19% increase in CO <sub>2</sub> from 1959 to 2004

Greenhouse Gases

## Analysis Questions

Look carefully at your completed table.

CO<sub>2</sub>

1. How has the amount of carbon dioxide gas in the atmosphere changed from the beginning of the earth's history to present time?

There was no CO<sub>2</sub> in the beginning. Erupting volcanoes put CO<sub>2</sub> into the atmosphere. (70%) Oceans absorbed the CO<sub>2</sub>, so CO<sub>2</sub> levels decreased to <1%. Human activities have caused CO<sub>2</sub> levels to rise.

2. How has the amount of oxygen gas in the atmosphere changed from the beginning the earth's history to present time?

There was no O<sub>2</sub> in the beginning. Living things (including plants) put O<sub>2</sub> into the atmosphere. O<sub>2</sub> levels went from 1% to 21%.

3. How have living organisms (plants, animals and people) affected the composition of the earth's atmosphere (what gases it's made of)? Support your answer with examples from this activity.

Human activities have ↑ CO<sub>2</sub> % and other Greenhouse gas. Plants have ↑ O<sub>2</sub> %.

4. Reflection: Do you think that the atmosphere will have different amounts of oxygen and carbon dioxide in the future? Explain your reasoning.

(Hint: What effect has human activity had the atmosphere?)