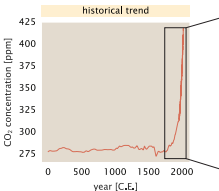
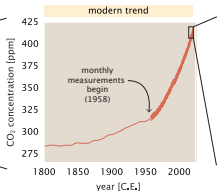


# ATMOSPHERIC CO<sub>2</sub> IN THE PRE- AND POST-INDUSTRIAL ERA

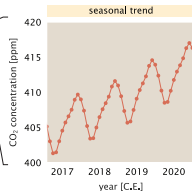
(A)



(B)



(C)



(D)

## WHAT IS THE MASS OF CONTEMPORARY CO<sub>2</sub>?

$$\begin{aligned}
 p_{\text{atmosphere}} &\approx 10^5 \text{ Pascal} \approx 10^5 \frac{\text{N}}{\text{m}^2} \\
 A_{\text{earth}} &\approx 5 \times 10^{14} \text{ m}^2 \\
 g &\approx 10 \frac{\text{m}}{\text{s}^2} \\
 m_{\text{atmosphere}} &\approx \frac{p_{\text{atmosphere}} \times A_{\text{earth}}}{g} \approx \frac{10^5 \text{ N}}{\text{m}^2} \times \frac{1 \text{ s}^2}{10 \text{ m}} \times 5 \times 10^{14} \text{ m}^2 \\
 &\approx 5 \times 10^{18} \text{ kg} \\
 c_{\text{CO}_2} &\approx \frac{420 \text{ CO}_2 \text{ molecules}}{10^6 \text{ air molecules}} \approx \frac{10^{-3} \text{ kg CO}_2}{1 \text{ kg air}} \\
 m_{\text{CO}_2} &\approx m_{\text{atmosphere}} \times c_{\text{CO}_2} \approx 5 \times 10^{18} \text{ kg} \times 10^{-3} \frac{\text{kg CO}_2}{\text{kg air}} \\
 &\approx 5 \times 10^{15} \text{ kg CO}_2
 \end{aligned}$$