

Carbon is a chemical element that is found all over the world and in every living thing. Oxygen is another element that's found in the air we breathe. When carbon and oxygen bond together, they form a colorless, odorless gas called CO₂. In the Earth's atmosphere, CO₂ is a greenhouse gas, which means it traps heat. This "greenhouse effect" naturally helps to keep the Earth's temperature at a level that can support life on the planet. The atmosphere isn't the only part of the Earth that has carbon. The oceans store large amounts of carbon, and so do plants, soil, and deposits of coal, oil, and natural gas deep underground. Carbon constantly moves from one part of the Earth to another through a natural repeating pattern called the carbon cycle. The carbon cycle helps to maintain a balanced level of CO₂ in the Earth's atmosphere. But right now, people are changing this natural balance by adding more CO₂ to the atmosphere whenever we burn fossil fuels (such as coal, oil, and natural gas)—whether it's to drive our cars, use electricity, or make products. This extra CO₂ is being added to the atmosphere faster than natural processes can remove it, causing the atmosphere to trap more heat and causing the Earth's average temperature to rise. Scientists have found that the recent levels of CO₂ in the atmosphere are abnormally high compared with the long-term historical trend, and these levels are continuing to increase at an unprecedented rate. The amount of CO₂ found in the atmosphere varies over the course of a year. Much of this variation happens because of the role of plants in the carbon cycle. Plants use CO₂ from the atmosphere, along with sunlight and water, to make food and other substances that they need to grow. They release oxygen into the air as a byproduct. This process is called photosynthesis. Another process that is part of the carbon cycle is respiration, by which plants and animals take up oxygen and release CO₂ back into the atmosphere.