



Carbon: an essential element

Carbon has a bad reputation nowadays, despite being a substance that is the basic building block of life. Bound to two atoms of oxygen, it creates carbon dioxide, the chief greenhouse gas that has kept our planet warm for billions of years and is now making us too warm because of human activity. When we think of carbon, the first word we associate with it is “emissions”, a concept that evokes negative feelings and thoughts. In his new book *The Carbon Age: How Life's Core Element Has Become Civilization's Greatest Threat*, Eric Roston points out that C is about more than just CO₂. Carbon should not be thought of only in terms of climate change. If we want to learn about the world, the fastest way is to follow the carbon. Roston started to be interested in carbon when he was a reporter at *Time* magazine. He found the word popping up everywhere, in stories about climate-change issues, but also in those about low-carb diets or even the ultra-light carbon bikes. The result of his studies is *The Carbon Age*, a kind of biography of the atomic element that is vital to our world, because it is the central element of life and civilization. All forms of life on the Earth are carbon-based. That's because, on a molecular level, carbon is a wonderful chemical joiner. In fact carbon atoms will combine with almost any other element to form the more complicated building blocks of life. Beyond constituting the brick of life, carbon is virtually inescapable in industry as well: the plastics that can be found in everything and our main fossil fuels are all made up of carbon. The sheer ubiquity of carbon is what makes eliminating greenhouse-gas emissions so difficult. The problem is that we are burning ever larger amounts of fossil fuels, giving off into the atmosphere the greater concentration of carbon that has been seen for millions of years. Carbon has its positive effect, even in the air, but we need to kick our carbon habit if we don't want to waste our planet. Roston adds that there's never been a purposeful transformation in our energy system. We went to coal because it was better than wood, and we went to oil because it was better than coal. If we're going to cut out carbon, it is going to require a broad, dedicated policy, and it will take years. But we don't have much choice.

(adapted from *Time Science*, July 27, 2008)

ACTIVITIES

1 Decide if the following sentences are true or false and correct the false ones.

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| 1 Carbon has a bad reputation nowadays because it is the basic building block of life. | T F |
| 2 Carbon dioxide is the chief greenhouse gas responsible for keeping our planet warm. | T F |
| 3 Carbon is too often associated with the word “emissions”. | T F |
| 4 Roston's book is about the negative effects of carbon. | T F |
| 5 He started his research on carbon when he worked as a <i>Time</i> magazine reporter. | T F |
| 6 He discovered that carbon is not so omnipresent. | T F |
| 7 All life forms are carbon-based because carbon is the simplest element. | T F |
| 8 Carbon is widely used in industry as well. | T F |
| 9 The concentrations of carbon in the atmosphere are decreasing. | T F |
| 10 It will take time to cut out carbon from our energy system but we there is no other option. | T F |

2 Match these words to their definitions.

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|---------------|---|
| 1 Chief | A With a restricted carbohydrate consumption |
| 2 Threat | B A plan or course of action |
| 3 Pop up | C An indication of impending danger or harm |
| 4 Low-carb | D Able to combine or join things together |
| 5 Ultra-light | E To free oneself of |
| 6 Joiner | F Most important or influential |
| 7 Sheer | G Appear suddenly or unexpectedly |
| 8 Ubiquity | H Completely such, without exception |
| 9 Kick | I Existence everywhere at the same time, omnipresence |
| 10 Policy | J Extremely light in weight |

3 The article in *Time* magazine (2008) discusses some important issues relating to carbon emissions and future actions to be taken. What has changed in your opinion? Have governments passed new laws in order to limit the level of carbon emissions in the atmosphere? Do some research and prepare a presentation for the rest of the class.