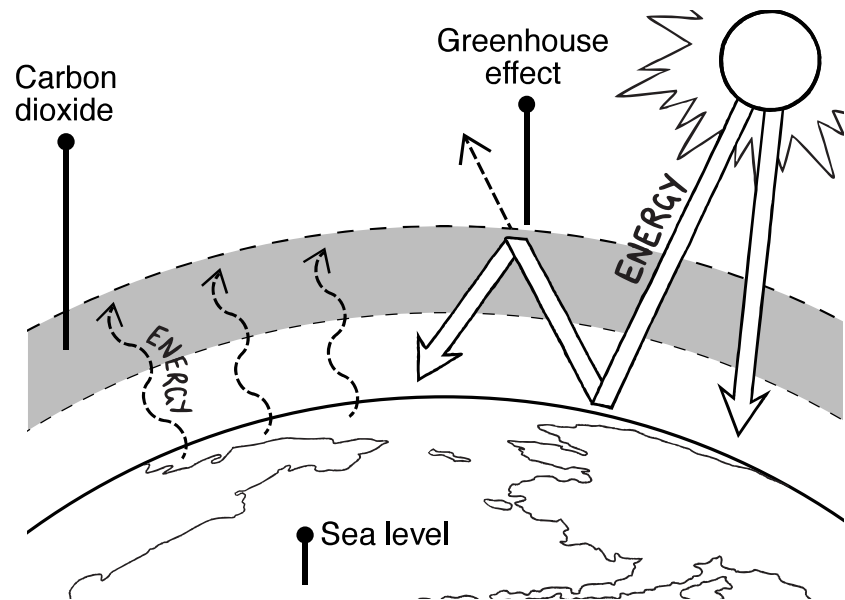


Earth's Climate

The Sun gives Earth the energy it needs to stay warm and support life. Some of that energy is absorbed by Earth, and some bounces back into space — this constantly changing balance is called Earth's **energy** budget.

Gases in our atmosphere, like **carbon dioxide**, trap some of the escaping heat in a process called the **greenhouse effect**. This is natural and keeps Earth warm enough for life, but when too much carbon dioxide is added, it traps too much heat. This causes Earth's climate to shift over time, which can lead to rising sea levels as glacier ice melts and oceans get warmer.

Warmer oceans have less sea ice and more dark water, which absorbs more heat than reflective ice. Sea ice loss means less protection from storms and more erosion for coastal Arctic communities, and greater challenges for polar bears and walrus that depend on sea ice to survive. It could also affect the jet stream, a band of high winds driven by different temperature layers in the atmosphere that typically guides weather systems in the northern hemisphere. This in turn could cause more intense storms and flooding far away from the Arctic.



Speaking of the Heliosphere...

The Sun drives Earth's complex climate system, which is characterized by long-term weather patterns. These weather patterns, such as temperature and precipitation, are often grouped into categories described as tropical, dry, temperate, continental, and polar.



The Inupiat live in a polar climate where the year is dominated by a long winter season. Their word for *year* is **ukiuq**. Scan the QR code to hear its pronunciation.

