



SunWise Kids

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Ozone Layer



The ozone layer forms a thin shield high up in the sky. It protects life on Earth from the sun's ultraviolet (UV) rays. In the 1980s, scientists began finding clues that the ozone layer was going away or being depleted. This allows more UV radiation to reach the Earth's surface. This can cause people to have a greater chance of getting too much UV radiation. Too much UV can cause bad health effects like skin cancer and eye damage.

What Is Stratospheric Ozone?

Ozone is a natural gas that is found in two different layers of the atmosphere. One layer, called the *troposphere*, is at the Earth's surface where we live. Ozone in the troposphere is "bad" because it dirties the air and helps make smog, which is unhealthy to breathe.

The other layer, called the *stratosphere*, is miles above the Earth's surface. Ozone in the stratosphere is "good" because it protects life on Earth by absorbing some of the sun's harmful UV rays. Stratospheric ozone is found most often between six and 30 miles above the Earth's surface.

Ozone Depletion

Recently, chlorofluorocarbons (CFCs) were used a lot in industry and elsewhere to keep things cold and to make foam and soaps. Strong winds carry CFCs up into the stratosphere where UV radiation breaks them apart, releasing chlorine atoms. Each chlorine atom can attack and break apart (destroy) as many as 100,000 ozone molecules during the time it is in the stratosphere. The chlorine from CFCs reduces (depletes) the amount of ozone in the stratosphere.

Other ozone-eating chemicals are pesticides such as methyl bromide, halons used in fire extinguishers, and methyl chloroform used in businesses.

What Is Being Done?

Countries around the world, including the United States, have seen the threats created by ozone depletion and agreed to a treaty called the Montreal Protocol. This Protocol will help