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Smog – Its Causes and Dangers

What is smog?

The word “smog” was first created in the early 1900s by putting the words “smoke” and “fog” together. Today, we know what **smog**¹ really is. It is **pollutants**² in the air, mostly **ozone**³ (three

connected oxygen atoms).

We usually think of ozone as a good thing: the ozone layer in the upper atmosphere protects our planet from the Sun’s rays. But when ozone is in the air we breathe, near the ground, it is dangerous. Ozone forms near the ground when sunlight helps reactions between volatile organic compounds

Did You Know?

There are over 1,000 stations in the United States to measure ozone and other air pollutants.



Smog is air pollution.

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What are the effects of smog?

Ozone is dangerous to both plants and animals. It slows plant growth and can kill plants. It can cause breathing problems and eye irritation in humans and other animals. The haze caused by smog can make it hard to see. The harmful effects of smog can last hours after contact. Repeated contact can lead to permanent damage. Some people are more sensitive to smog than others.

¹ **Smog**: a combination of pollutants in the air

² **Pollutants**: things that are harmful to the environment and/or human health

³ **Ozone**: three connected oxygen atoms

These people include children, seniors, people with chronic breathing problems (like bronchitis or asthma), and people who are very active outdoors.

What can be done to reduce smog?

Both governments and individual people can work to cut down on smog.



Some governments have passed laws to limit motor vehicle emissions.

Governments: In 1990, the United States passed the Clean Air Act. Its goal was to reduce major pollutants such as ozone and nitrogen oxide. The Environmental Protection Agency set air quality rules for states. Most laws target **motor vehicle emissions**⁴ (pollutants from cars, trucks, buses, and boats). Such laws include changes in gasoline recipes, using other types of fuel, traffic rules, carpool and public transportation programs, emissions fees for vehicles,

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People: Individuals can work to reduce ozone in several different ways. If more people drove less, and instead walked, biked, or took public transportation or carpools, pollutants in the air would be reduced. People who can't do these things need to keep their cars in the best shape they can by keeping up with mechanic appointments. Even something as simple as filling up your gas tank in the coolest parts of the day and avoiding spills while refueling can prevent gases from heating up to create ozone and keep excess gases from being released. Chemical products should be tightly sealed to prevent evaporation. In addition, you shouldn't use products that release VOCs. Gas-powered lawn equipment is also bad for air quality. Instead, choose low-VOC paints and electric lawn mowers, for example.



Biking instead of driving helps lower emissions.

⁴ **Motor vehicle emissions:** pollutants from cars trucks, buses, and boats

Reading Comprehension Questions:

1. What is
2. How is ground-level ozone produced?
3. The
4. How does smog affect humans and other animals?
5. Which
6. What kinds of things do laws aim to change to improve air quality?
7. What kinds

Extension Questions:

8. In some countries, governments require an emissions test to ensure your car is not polluting unnecessarily. If the driver doesn't comply, they can't renew their license. What do you think about this law?
9. What are

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