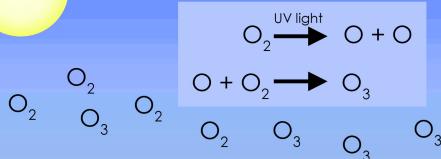
Air Chemistry and Pollution Reactions

Side 1 Advanced

Model some of these reactions using LEGO® bricks.

Ozone Layer



Ozone in the upper atmosphere creates a protective layer around the earth that blocks most of the sun's harmful UV rays.



Coal fired plant
$$\longrightarrow$$
 SO₂

$$SO_2 + H_2O \longrightarrow H_2SO_3$$

$$H_2SO_3 + H_2O_2 \longrightarrow H_2O + H_2SO_4$$
These pollutants are created by burning coal for electrical energy.

These pollutants come from incomplete combustion reactions in truck and car engines.

In sunlight, pollutants react with the air, creating these new pollutants. They form smog when mixed with soot.

Car exhaust
$$\longrightarrow$$
 NO₂

$$NO_2 \xrightarrow{\text{sunlight}} NO + O$$

$$O + O_2 \longrightarrow O_3$$

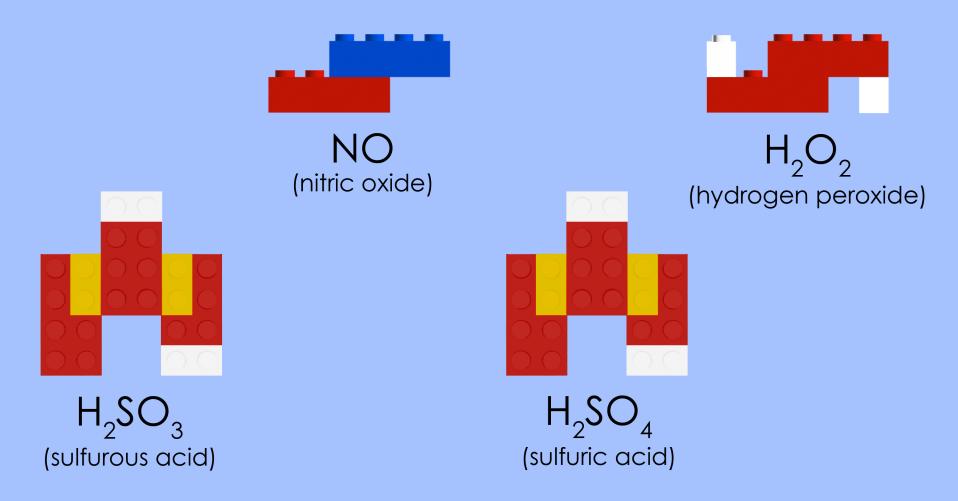
 $C_3H_8 + 4O_2 \longrightarrow CO_2 + 2CO$ $C_3H_8 + 4O_2 \longrightarrow 2CO_2 + C$

Instead of propane (C_3H_8), cars and trucks actually use a similar fuel, octane (C_8H_{18}).

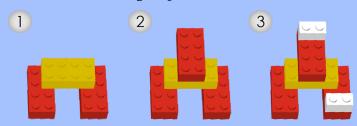
Ozone at ground levels is harmful to our health.

Air Chemistry and Pollution Reactions

LEGO® molecules you may need for the reactions on Side 1.



How to build H₂SO₃ (sulfurous acid):



How to build H₂SO₄ (sulfuric acid):

