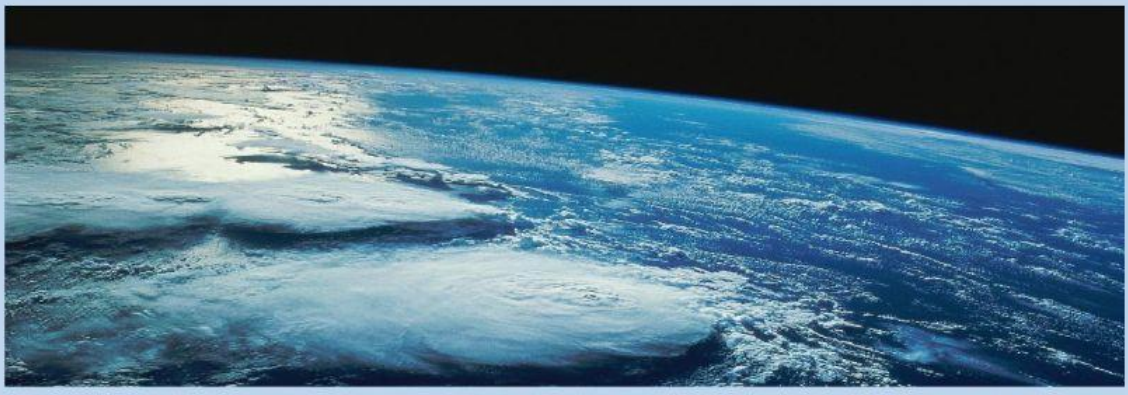
Social Studies

THE ATMOSPHERE PROTECTS US



Vocabulary

- **Atmosphere –** blanket of gases that surrounds the Earth
- **fossil fuels –** natural resources for example, coal, oil and gas, that are made from animals and plants that lived long ago
- **acid rain –** rain that has been polluted by various gases
- **Photosynthesis –** the way in which green plants while making food release oxygen, using carbon dioxide and sunlight
- **global warming –** the warming up of the Earth's atmosphere
- **Stratosphere –** one of the layers of the atmosphere

WHAT IS THE ATMOSPHERE?

The Earth is surrounded by several layers which together are called the atmosphere.

The atmosphere is described as a blanket of air is held close to the Earth by the force of gravity.

It surrounds the Earth completely and is about 900 kilometers thick.

Without it there would be no air for us to breathe in and all living things would die.

There would be no wind. The whole world would be silent and dead.

Heat and light from the sun are necessary to all forms of life. The atmosphere stores heat, protects us from the bitter cold of outer space, and shields us from the Sun's harmful ultraviolet radiation.

POLLUTING THE ATMOSPHERE

Clean air is essential to healthy life. In some places in the world, the air is so polluted that it is not safe to breathe.

LIVEWORKSHEETS

How does the atmosphere become polluted?

When fuel is burned, it releases harmful wastes in the form of gases. These come from factories and also from things made in factories, like cars. This polluted air spreads out into the atmosphere and does not disappear.

THE GREENHOUSE EFFECT

A greenhouse

A greenhouse is a building made of glass where plants that need special care and extra warmth can be grown.

The sun shines through the glass of the greenhouse and warms the air inside it.

We cannot see the gases in the atmosphere, but they include oxygen, carbon dioxide, nitrogen and hydrogen. Nitrogen is the main gas in the air we breathe.

The atmosphere is like a giant greenhouse. The sun shines in, and the blanket of gases traps the heat like a roof, keeping it close to the planet. This warmth and light are essential to all living things.

But factories, power stations and motor vehicles are making a lot of new gases.

Even trees, when they are burnt, give off gases.

These new gases are trapping more and more of the sun's heat. This is called **'the greenhouse effect'.**

Because of the thicker blanket of gases, the Earth is warming up. This is called **global warming**.

If it continues, it could begin to melt the Arctic and Antarctic ice caps.

The increase in the sea level would submerge nearly all of The Bahamas!

THE OZONE LAYER

The ozone layer is in part of the atmosphere called the **stratosphere**, high above the surface of the Earth, and it protects the Earth from the sun's radiation.

Ozone is a form of oxygen which takes in much of the harmful ultraviolet radiation from the sun.

In recent years scientists have noticed that the ozone layer is getting thinner in some places, for example over the continent of Antarctica.

This thinning is believed to be caused by chemicals called chlorofluorocarbons (CFCs), which are used in many manufactured goods like aerosol spray cans, air conditioners, refrigerators and polystyrene.

Scientists describe the thin patches in the ozone layer as 'holes'.

LIVEWORKSHEETS