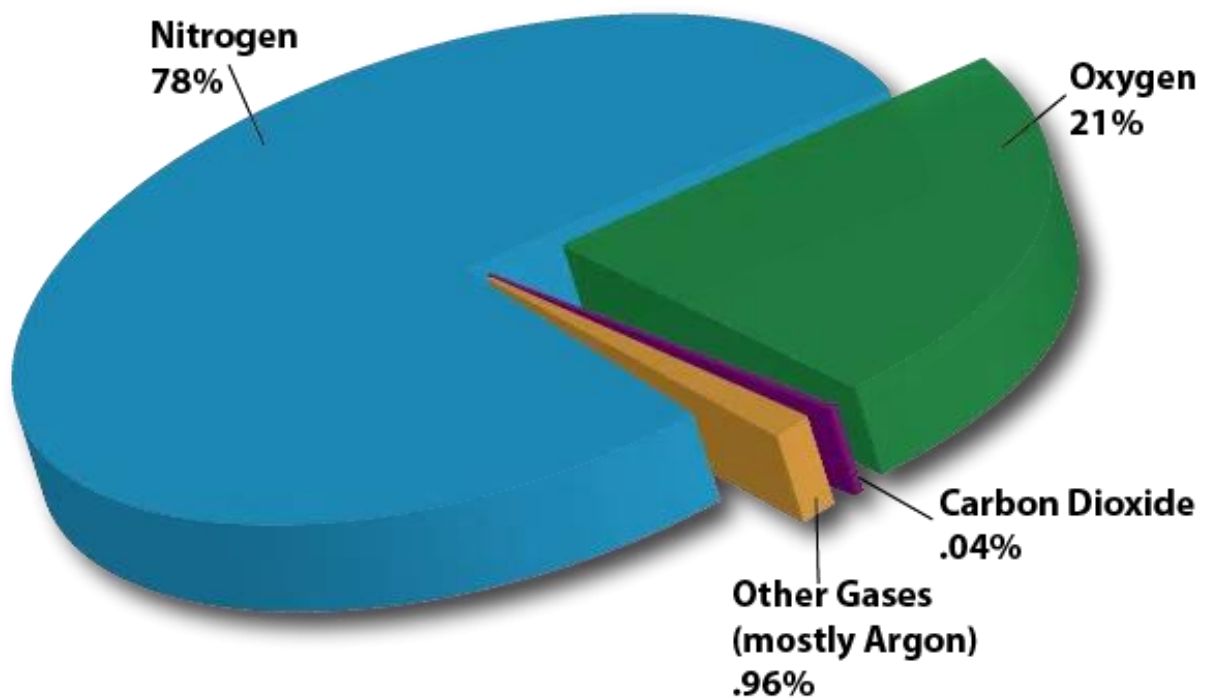


# THE OZONE LAYER

## Warm Up

Look at this picture, it shows the composition of the air we breathe.



1. Name all the gases in the air we breathe.
2. Which gas has the highest percentage in the air we breathe?
3. How much oxygen is there in the air we breathe?
4. Does this surprise you? Did you think there was more oxygen or less oxygen?

## Vocabulary

explosive: something that can burst with great force and noise

blocking: the action of stopping or obstructing something

absorbing: slowly taking something in, physically or mentally

protective: making sure that something is not harmed

irritate: make someone angry or annoyed

excessive: too much

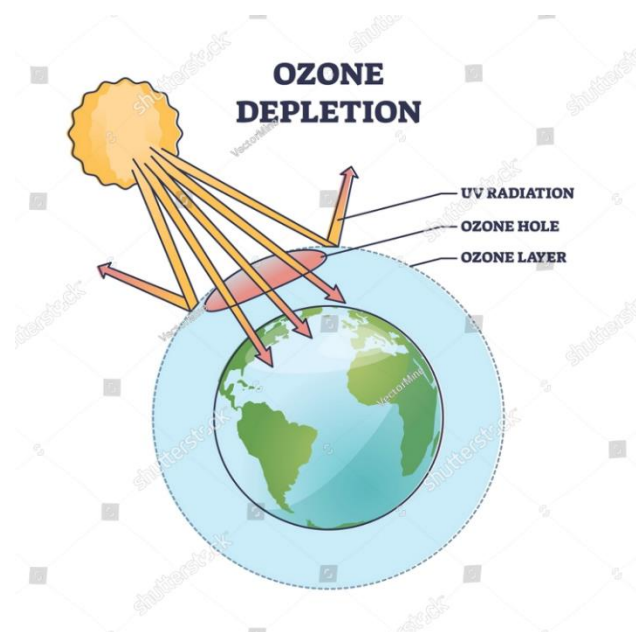
destructive: being able to destroy or harm

You know that the Earth is made up of land and water. About 70 percent of the Earth's surface is water and only 30 percent is land. The Earth is surrounded by a layer of air called the atmosphere.

Today we are going to talk about ozone. Ozone is a pale blue gas. It is a form of oxygen. The common form of oxygen is a gas that all humans and animals breathe to live. When sunlight interacts with oxygen in our atmosphere, ozone is created.

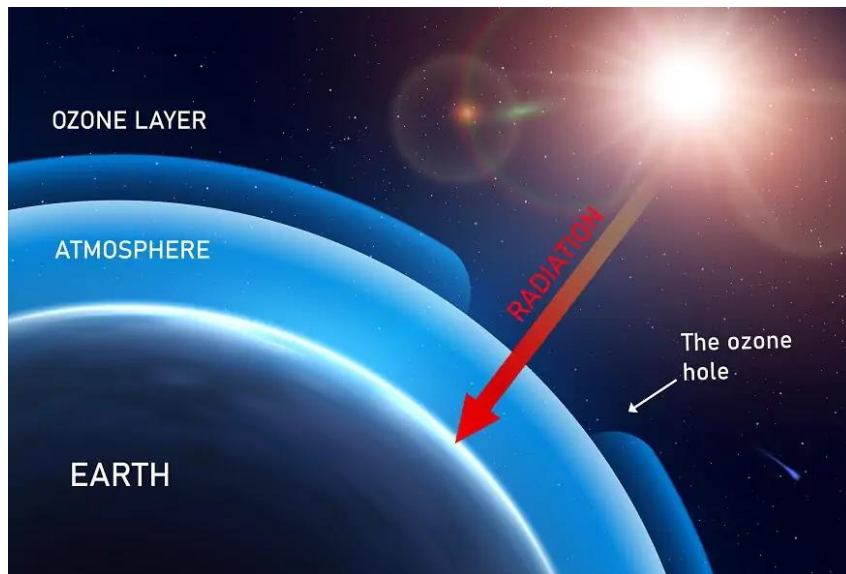
The atmosphere is divided into five layers. The lowest layer, the troposphere, extends from the Earth's surface up to about 10 kilometres above

the Earth. Most human activities occur in the troposphere. The next layer, the stratosphere, continues from 10 km to about 50 km above the Earth. Most commercial airplanes fly in the lower part of the stratosphere. The two lowest layers of our atmosphere are most important to life. Most atmospheric ozone is concentrated in a layer about 9 to 18 miles (15 to 30 km) above the Earth's surface; it is just above the troposphere. The ozone layer is a protective shield composed of ozone. This layer protects the earth from harmful ultraviolet (UV) radiation from the sun.



This figure will help you understand how the ozone layer protects the Earth from harmful

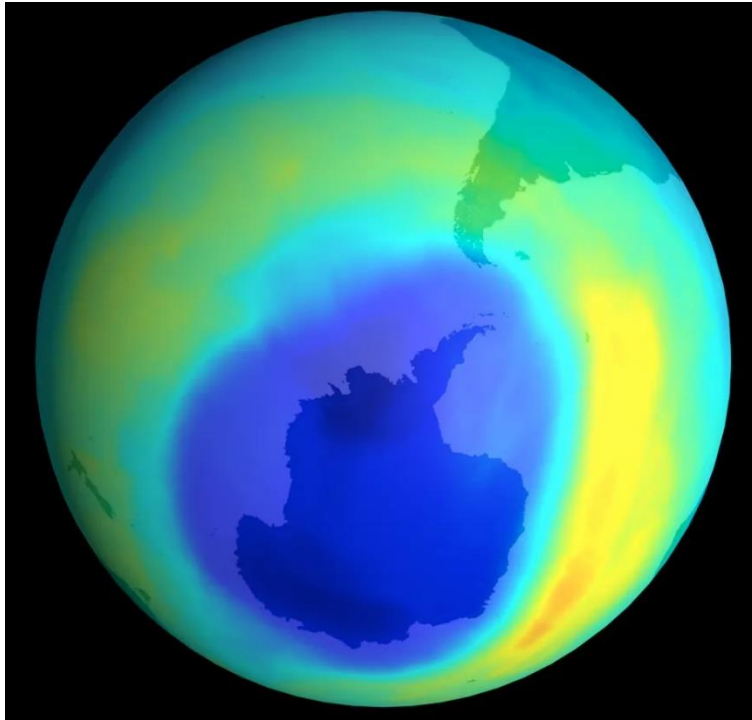
radiation. The harmful UV radiation cannot pass through the ozone layer.



When there is a hole in the layer, the harmful radiation enters the Earth's atmosphere. Even when the ozone layer gets thinner, we have less protection from ultraviolet light. Excessive UV light can cause sunburns, cataracts, and skin cancer. It can also damage plants.

Scientists have found a "hole" in the ozone layer over Antarctica. Over time the ozone hole over the Antarctic has not only grown larger but the layer has also become thinner.

The blue hole in this picture shows the hole in the ozone layer above the Antarctic.



Some chemicals like CFCs used in refrigerators, air conditioners, and in some industries can destroy the protective ozone layer or make the ozone layer thinner.

When scientists figured out that CFCs were destroying ozone, they worked together with lawmakers to stop people from making these chemicals. To preserve the ozone layer, many countries have limited their use of these destructive chemicals.

We hope that by being very careful we can repair the hole in the ozone layer in the future.

Though ozone is helpful high above Earth, it is a form of air pollution near the Earth's surface where it can be poisonous and explosive. Even tiny amounts in the lower atmosphere can irritate people's eyes and cause coughing. Automobile exhaust combined with sunlight can increase the ozone in the air. People in many large cities suffer from health problems caused by high ozone levels.

A. Complete the sentences by ticking the most appropriate options.

1. The earth is made up of
  - a. 80 percent water
  - b. 70 percent water
  - c. 30 percent water
  - d. 50 percent water
2. The Earth is surrounded by
  - a. Oxygen
  - b. Ozone
  - c. the atmosphere
  - d. water
3. The most important layer/s of the atmosphere are
  - a. the fourth layer
  - b. the second layer

- c. the third layer
  - d. the first and second layers
4. The ozone layer is above the
- a. first layer
  - b. second layer
  - c. the fourth layer
  - d. the third layer

B. Tick the most appropriate answer.

1. What is the purpose of the ozone layer?
- a. To trap harmful gases
  - b. To protect the earth against UV rays
  - c. To regulate temperature
  - d. To block visible light
2. What causes the formation of ozone in the atmosphere?
- a. Interaction of sunlight with nitrogen
  - b. Interaction of sunlight with carbon dioxide
  - c. Interaction of sunlight with water vapour
  - d. Interaction of sunlight with oxygen
3. What happens when there is a hole in the ozone layer?
- a. Harmful radiation enters the

- atmosphere
  - b. Harmful gases are released
  - c. The Earth's temperature decreases
  - d. The atmosphere becomes more stable
4. How have many countries contributed to preserving the ozone layer?
- a. By releasing more CFCs into the atmosphere
  - b. By limiting the use of destructive chemicals
  - c. By increasing industrial gasses
  - d. By removing the ozone layer entirely
5. How does ozone pollution near the Earth's surface cause harm?
- a. It helps in visibility
  - b. It increases oxygen levels
  - c. It causes coughing and eye irritation
  - d. It is a source of nourishment for plants

C. Answer these questions.

1. How is ozone created?
2. Where is ozone good for us?
3. How does it protect us?



4. How can ozone enter the Earth's atmosphere?
5. Explain in your own words how the ozone layer becomes thinner.

D. Use the phrasal verbs from the box to complete the sentences.

make out	make do	make for	makeup
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1. Radha couldn't \_\_\_\_\_ the words in the book because the print was too small.
2. Karan and Mira had an argument, but they decided to \_\_\_\_\_ and be friends again.
3. Meera forgot her lunch, so she had to \_\_\_\_\_ by sharing snacks with her friends.
4. We will have to \_\_\_\_\_ without fans until the electricity comes back.

E. Use the words from Vocabulary to fill in the blanks.

1. The firefighter wears a \_\_\_\_\_ suit to stay safe from the flames.
2. The towel is soft and good at \_\_\_\_\_ the water from a wet body.

3. Talking loudly in class can \_\_\_\_\_ our teacher, so it's good to speak softly.
4. The fireworks made an \_\_\_\_\_ sound in the night sky.
5. The goalie did a great job by \_\_\_\_\_ the football from going into the net.
6. It's important not to be \_\_\_\_\_ with toys and instead play gently with them.

F. Make sentences of your own from the words given in Vocabulary.