8 Ozone Depletion

Get ready!

1 Before you read the passage, talk about these questions.

1 What can happen to the ozone layer if it is damaged?

2 What are some things that cause ozone depletion?



Ozone Protection: We're Finally Doing Something Right

We have learned to expect bad news when we hear about our planet. However, environmental scientists finally have good news. **Ozone thinning** has decreased since a number of nations agreed to the **Copenhagen Protocol**.

Today's Nation Science News

The **ozone** layer is vital to the health of many organisms, including humans. It reduces the amount of **ultraviolet radiation** that reaches the Earth. Radiation exposure in humans causes severe medical conditions like **cataracts** and **malignant melanomas**. Radiation also causes the death of **phytoplankton**, which performs an important role in regulating atmospheric CO_2. Naturally, we want to protect the ozone layer.

A few decades ago, scientists discovered that increased radiation was passing through **ozone holes**. They determined that compounds called **CFCs** were breaking down the ozone. The compounds were being released with the use of **Freon**. These included **coolants** in refrigerators and **propellants** in spray cans, among other products. These products **depleted** the ozone at an alarming rate.

In response, many countries agreed to **phase out** these harmful products. Unfortunately, ozone **recovery** may be a slow process. **Seasonal** ozone depletion remains high in some areas. However, scientists are optimistic that ozone levels will return to normal in the next few decades.

Reading

2 Read the article. Then, choose the correct answers.

1 What is the purpose of the article?

A to encourage people to avoid using CFCs and propellants

B to recommend government assistance with ozone recovery

C to explain the importance of preserving the atmosphere

D to describe treatments for radiation exposure

2 Which of the following is NOT a cause of ozone depletion?

A Freon C propellants

B coolants D melanomas

3 According to the article, what is true about ozone recovery?

A It may take a few decades.

B It is easier with increased use of CFCs.

C It is not likely to happen.

D It will probably cause phytoplankton deaths.

Vocabulary

3 Match the words (1-8) with the definitions (A-H).

1 __ CFC 5 __ phase out

2 __ ozone 6 __ phytoplankton

3 __ deplete 7 __ ozone thinning

4 __ seasonal 8 __ ultraviolent radiation

A the process in which the protective stratospheric layer becomes depleted

B powerful energy from the sun that is harmful at high levels

C a compound that is used to make some coolants and propellants

D occurring at a particular time of year

E to greatly reduce the amount of something

F to gradually remove or stop something

G a type of small plant that lives in water

H a protective layer of oxygen in the stratosphere



LIVEWORKSHEETS

4 Place the words and phrases from the word bank under the correct headings.

WORD BANK

coolant ozone hole Freon
cataract propellant recovery
Copenhagen Protocol
malignant melanoma

Causes of ozone depletion
_____
_____
_____
Effects of ozone depletion
_____
_____
_____
Reversing ozone depletion
_____
_____
_____

5 Listen and read the article again. What can cause malignant melanomas?

Listening

6 Listen to a conversation between two scientists. Mark the following statements as true (T) or false (F).

1 __ According to the man, the ozone hole will affect the whole planet.

2 __ The woman predicts higher risks of skin conditions.

3 __ The man thinks that ozone recovery will take hundreds of years.

7 Listen again and complete the conversation.

Scientist 1: Have you seen the latest satellite readings? Ozone levels don't look too good.

Scientist 2: I'm not surprised. We've seen **1** _____ _____ for the last several years.

Scientist 1: The ozone hole is over Antarctica now. It'll damage the **2** _____ _____ down there.

Scientist 2: You're probably right. **3** _____ _____ _____ there aren't any people down there.

Scientist 1: That doesn't matter. If phytoplankton is affected, **4** _____ _____ _____. They're major players in the carbon cycle.

Scientist 2: I guess that's true. High CO_2 levels will warm **5** _____ _____ _____.

Scientist 1: Right. And besides, the **6** _____ _____ could drift towards more populated areas.

Speaking

8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

Have you seen ...?
But at least ...
It's a good thing that ...

Student A: You are a scientist. Talk to Student B about:

- an ozone hole
- the causes of the hole
- the effects of the hole

Student B: You are a scientist. Talk to Student A about an ozone hole.

Writing

9 Use the article and the conversation from Task 8 to write a letter encouraging a nation's President to sign the Copenhagen Protocol. Include: a change in the ozone, effects of the change, and how the protocol will improve the situation.

LIVEWORKSHEETS