

## Episode 17 - The Precious Envelope

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1. What are the three main gases that make up the atmosphere?
2. What is the chemical formula for ozone?
3. What region of the electromagnetic spectrum is absorbed by ozone?
4. What are some positive and negative properties of ozone?
5. What is a CFC? According to the video, how do CFCs affect ozone?
6. What gases were thought to be in the earth's early atmosphere?
7. What is thought to be the source of these gases?
8. How have scientists been able to monitor changes in the earth's atmosphere ?
9. What did the color change in the bromthymol blue solution containing the plant show about the role of carbon dioxide and plants?
10. What is meant by the greenhouse effect? What atmospheric gases are thought to be involved in this process?

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## Answer Key

1. What are the three main gases that make up the atmosphere?

*N<sub>2</sub>, O<sub>2</sub>, Ar*

2. What is the chemical formula for ozone?

*O<sub>3</sub>*

3. What region of the electromagnetic spectrum is absorbed by ozone?

*Ultraviolet*

4. What are some positive and negative properties of ozone?

*Ozone absorbs UV radiation which can be harmful to people and vegetation. The gas has an irritating odor and can damage tires and plants.*

5. What is a CFC? According to the video, how do CFCs affect ozone?

*Chlorofluorocarbon. UV radiation causes the release of a chlorine free radical which can lead to the breakdown of thousands of ozone molecules.*

6. What gases were thought to be in the earth's early atmosphere?

*Methane, ammonia, and water.*

7. What is thought to be the source of these gases?

*Volcanic eruptions.*

8. How have scientists been able to monitor changes in the earth's atmosphere ?

*They study tree rings, ice and sediment cores.*

9. What did the color change in the bromthymol blue solution containing the plant show about the role of carbon dioxide and plants?

*The plant absorbs carbon dioxide, lowers the pH, and thus causes the change in color of the indicator.*

10. What is meant by the greenhouse effect? What atmospheric gases are thought to be involved in this process?

*The warming of the atmosphere due to the absorption of EMR by the atmosphere. Water vapor and carbon dioxide.*