



High School Science Virtual Learning

**Environmental Science**

**Causes of Ozone Depletion**

April 16, 2020



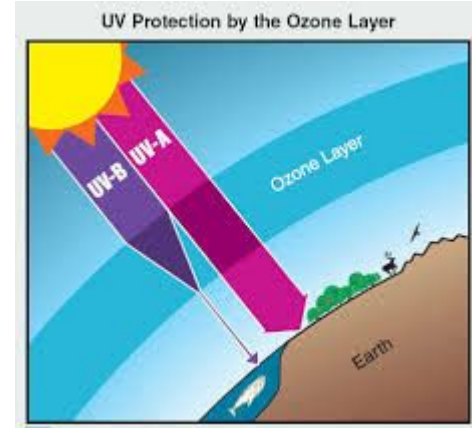
# High School Environmental Science

## Lesson: April 16, 2020

### **Objective/Learning Target:**

Students will list and analyze the causes of Ozone Depletion on the Earth.

1. Why is the ozone important?



2. Using your prior experience from yesterday's lesson and this picture, what radiation could harm organisms on Earth?

1. The ozone protects the surface from harmful UV radiation from the sun.
2. UVA Radiation

## Lesson Activity:

**Directions:** You will watch and read through a short article over how humans are depleting the ozone. As you go through both, make sure you are taking notes on the same page you used before. Here is an example on how you can set up your notes;

What causes Ozone breakdown?	What are sources that contain CFC's	How do CFC's attack the Ozone?	What are we doing to stop this?
...	...	...	..

**Link(s):** [Ozone video](#)

[Article on how Ozone is depleted](#)



# Practice

You will use the information from the activity and article link on slide 5 to create a table and answer the following questions.

# Practice Questions

CFC product	Inhalers	Preservation Sprays	Fire Extinguisher	Aerosol Hairsprays	Wasp Spray	Foam Insulation
Use?						
What is the problem?						

# Answer Key

Once you have completed the practice questions check with the work.

CFC product	Inhalers	Preservation Sprays	Fire Extinguisher	Aerosol Hairsprays	Wasp Spray	Foam Insulation
Use?	Deliver medication to lungs	To protect books and documents	To put out fires quickly	To place and style hair	Killing wasps and hornets.	commercial insulation, like refrigerated storage
What is the problem?	Contains CFCs	Contains either CFCs or HCFCs	Contains HCFCs	Replaced CFCs with HFCs	Replaced CFCs with HCFCs	Still made with HCFC





# More Practice

You will use the information from the activity on slide 5 and use the video clips to answer the following questions. Start with this video: [Ozone over Antarctica video clip](#)

## More Practice Questions

1. During what months do the highest values of ozone occur over the Antarctic?
2. During what months do the lowest values of ozone occur over the Antarctic?
3. How long does the ozone hole typically last?

After observing the latest year ozone images([2019 NASA Data](#)), answer the following questions:

4. What is the big difference you saw between 2013's and 2019's data.
5. What effect would the recent decline in production across the globe have on 2020's data?



# Answer Key

Once you have completed the practice questions check with the work.

1. Highest is from December through June.
2. Lowest is from July through November.
3. 5 months to a year
4. Answers may include:
  - a. Ozone hole seems smaller in 2019
  - b. There is more red in 2019
  - c. The hole rotates around Antarctica more in 2019
5. Answers may include:
  - a. According to the change between 2013-2019 there is a good chance the hole will be more healed in 2020
  - b. The reports of lessened production can mean there are less CFC's being put into the air
  - c. Less production means cleaner air
  - d. Less production means a smaller Ozone hole in 2020



# Additional Practice

If you wanted to compare your predictions from the practice questions you can use the original source of the data here:

[Ozone Data from NASA](#)