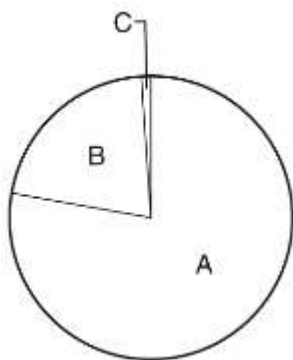


- The atmosphere is the boundary between Earth's surface and outer space. What is the atmosphere?
 - the layer above Earth where you can survive
 - the layer above Earth that contains ozone
 - the layer above Earth in which weather happens
 - all of the layers of gases that surround Earth
- The names of four atmospheric gases are listed below. Each gas makes up a different percentage of Earth's atmosphere. Which gas is **most** abundant in Earth's atmosphere?
 - oxygen
 - nitrogen
 - ozone
 - carbon dioxide
- The gases that make up Earth's atmosphere are commonly referred to as air. Approximately what percentage of air is made up of gases **other than** nitrogen and oxygen?
 - 99%
 - 1%
 - 11%
 - 21%



The atmosphere is an important part of what makes Earth livable. Refer to the circle graph to answer the following question.

- The graph shows the relative abundance of gases in Earth's atmosphere. Which gas corresponds to label B in the figure?
 - oxygen
 - argon
 - nitrogen
 - carbon dioxide
- The atmosphere exerts a force (pressure) on Earth. Why does the atmosphere exert pressure on Earth?
 - because of the greenhouse effect
 - because of the ozone layer
 - because of the weight of the air
 - because of the energy from the sun
- Earth scientists have identified four distinct layers of the atmosphere. What is the correct order of these layers from **lowest to highest altitude / elevation**?
 - thermosphere, mesosphere, stratosphere, troposphere
 - troposphere, stratosphere, mesosphere, thermosphere
 - troposphere, mesosphere, thermosphere, stratosphere
 - troposphere, stratosphere, thermosphere, mesosphere

7. The atmosphere is divided into four layers. Which layer has most of the total mass of the atmosphere?
A. mesosphere **B.** thermosphere **C.** stratosphere **D.** troposphere
8. Much of the ultraviolet radiation from the sun is absorbed in the atmosphere. Which component of Earth's atmosphere is responsible for absorbing ultraviolet radiation?
A. carbon dioxide **B.** water vapor **C.** nitrogen **D.** ozone
9. If the ozone layer became much thinner, which of the following would be most likely to happen on Earth?
A. the cryosphere would get bigger
B. it would be easier to breathe at high elevations
C. the greenhouse effect would increase
D. there would be an increase in cell damage in the coverings (skin) of living things
10. The atmosphere is divided into four layers. Within which layer of the atmosphere do humans live?
A. the stratosphere
B. the troposphere
C. the mesosphere
D. the biosphere
11. Ozone is a molecule that is found mostly in the stratosphere. What is the main benefit of ozone?
A. Ozone reflects most of the sun's heat back into space. It would be much hotter here without the ozone layer.
B. Ozone absorbs ultraviolet radiation from the sun and shields Earth from some of this harmful energy.
C. Ozone protects Earth from meteorites.
D. Ozone protects Earth from lightning.
12. The atmosphere is divided into four layers. Which characteristic is used to define where one layer ends and the next layer begins?
A. Elevation
B. Air pressure
C. Temperature
D. All of the above.

Gases of Earth's atmosphere: Matching

- A.** Water vapor **B.** Nitrogen **C.** Oxygen **D.** Carbon dioxide

13. We need this "#1, first place gas" in our bodies, but cannot get it directly from the air. We get it into our bodies by eating foods that contain it.
14. Plants use this gas to make food and oxygen.
15. We need this gas in our bodies so that we can burn our food to get energy.
16. Amount of this gas in the atmosphere may change a lot from one day to the next depending on the weather. We usually have a lot of it in the air in Florida.
17. One way that this gas gets into the atmosphere is by evaporation.
18. We make this gas as waste when we burn our food to get energy.

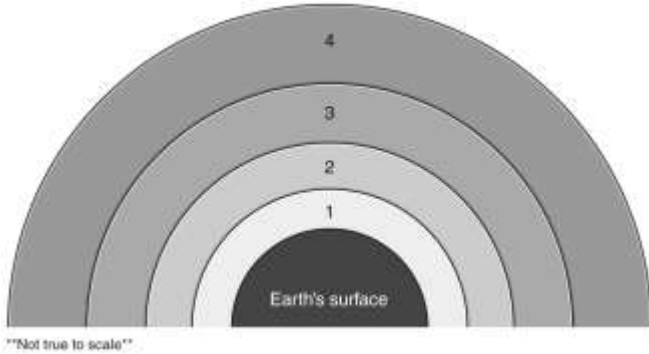


Look at the image of a greenhouse. A greenhouse is a building where plants are grown. Because a greenhouse traps some of the incoming energy from the sun, the air inside is generally warmer than the air outside.

19. Which gas in Earth's atmosphere acts like this greenhouse?

- A. Water vapor
- B. Methane
- C. Carbon dioxide
- D. All of the above

The following diagram shows the four layers of the atmosphere.



20. In which layer does weather happen?

- A. layer 1
- B. layer 2
- C. layer 3
- D. layer 4

21. In which layer is the International Space Station orbiting the Earth?

- A. layer 1
- B. layer 2
- C. layer 3
- D. layer 4

22 – 29: Matching

- 22. Coldest place in the atmosphere
- 23. Warmest place in the atmosphere
- 24. You are here!
- 25. Meteors start to burn up here due to friction.
- 26. Air pressure is greatest here.
- 27. Air pressure is the least here.
- 28. Most water vapor is here.
- 29. Most oxygen molecules are here.

- A. thermosphere
- B. troposphere
- C. mesosphere
- D. stratosphere

30, 31. The atmosphere does not consist entirely of gases; it also contains liquids and solids. For example, liquid water droplets or solid ice particles are found in clouds. **List two other solid particles (besides ice . . . you CAN'T list anything made of ice)** that are found in clouds or in other parts of the atmosphere.

32, 33. The atmosphere is important to life on Earth. Most people think the atmosphere is only useful to us for breather. Describe **two OTHER ways our atmosphere is helpful for living things on the Earth. (You CAN'T use answers that have to do with breathing!)**