

AIM | What is air made of?

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Several Americans have walked on the moon. Some of them even rode among the craters in lunar “buggies.” But the moon has no air of its own. So the astronauts had to take along their own—in tanks.

Take a deep breath. Go ahead—really do it! Do you need air tanks in order to breathe?

Our planet is not like the moon. Our planet has air. It is surrounded by an “ocean” of air. We call this ocean of air the *atmosphere* [AT muh sfeer].

Besides giving us air to breathe, the atmosphere is important in many other ways. It gives us our weather. It affects us when we ride in airplanes or walk.

The atmosphere is a mixture of gases. Nitrogen [NI truh jen] and oxygen [OK suh jen] make up most of this mixture. Small amounts of other gases make up the rest. They are *carbon dioxide*, *water vapor*, and certain “rare” gases.

The atmosphere also contains tiny pieces of solids like pollen, dust, and ash.

Most of the gases and solids of the air belong in the air. But some gases and solids do not. They did not get there in a natural way.

Gases and solids that do not belong in the air cause *air pollution*. These materials can be harmful.

There are many causes of pollution. Most air pollution comes from cars and factories. Some pollution comes from home chimneys.

Air pollution is a very serious problem.

COMPLETE THE GRAPH

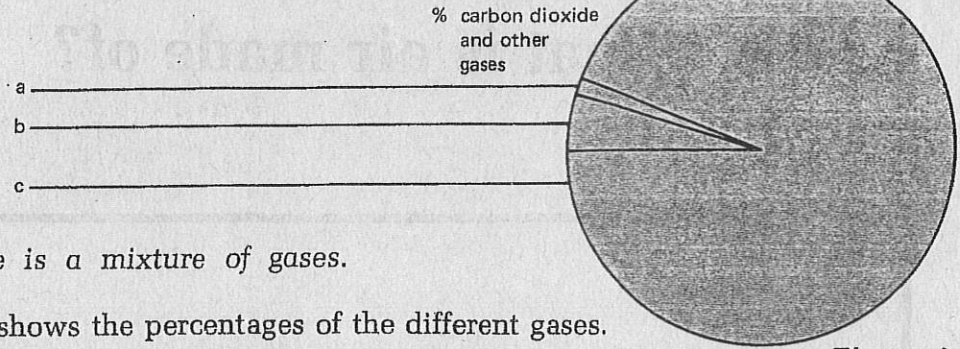


Figure A

The atmosphere is a mixture of gases.

This pie graph shows the percentages of the different gases.

- About 78 percent of the atmosphere is nitrogen.

Write "NITROGEN-78%" on the proper line of the graph.

- About 21 percent of the atmosphere is oxygen.

Write "OXYGEN-21%" on the proper line of the graph.

- Figure this one out.

If the atmosphere has 78 percent nitrogen and 21 percent oxygen . . .

then

what percent is left for carbon dioxide and the other gases? _____

Write this number on the proper line of the graph.

WHAT DOES THE PICTURE SHOW?

Look at Figure B. Then fill in the blanks.

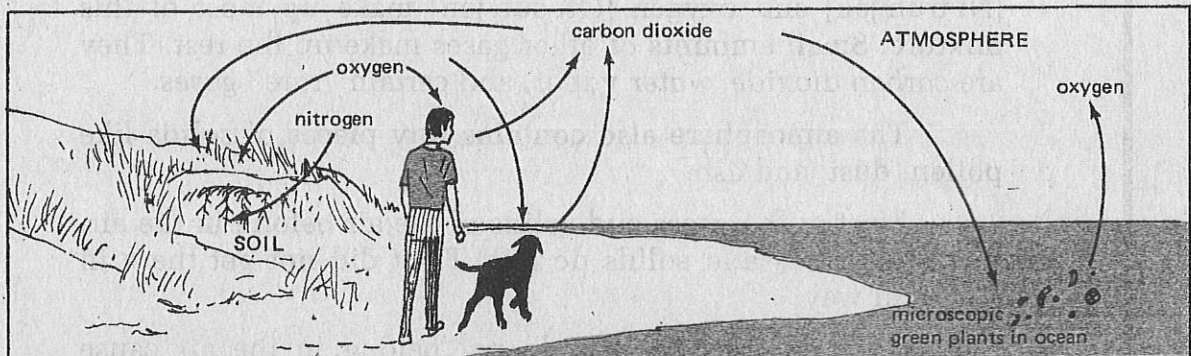


Figure B

- All living things need _____.
oxygen, carbon dioxide
- Green plants also need the gas _____.
carbon dioxide, nitrogen
- Plants get the carbon dioxide they need from _____.
the soil, animals
- Animals get the oxygen they need from _____.
the soil, plants
- Nitrogen from the air becomes an important part of the _____.
soil, ocean

WHERE DOES NATURAL DUST COME FROM?

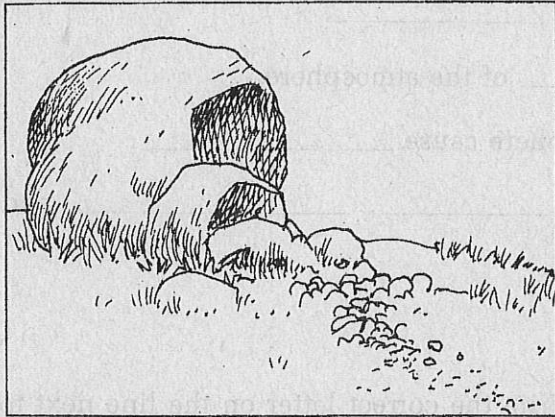


Figure C

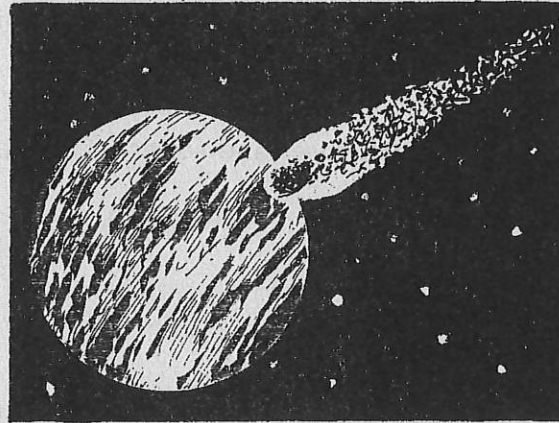


Figure D

Natural dust is formed in two ways:

Dust comes from broken-up rocks.

Rocks break into smaller pieces. Finally, they become the size of dust (Figure C).

Dust also comes from space.

Some dust comes from meteors that burn up in the atmosphere. Much more dust comes from deep outer space (Figure D).

Space dust adds about two million metric tons a year to the earth's weight. That's about 4½ billion pounds!

COMPLETING SENTENCES Complete the sentences with the choices below.

air pollution
78%
pollen
water vapor
factories

nitrogen
atmosphere
automobiles
dust
21%

home chimneys
oxygen
ash
mixture of gases

1. The ocean of air that surrounds the earth is called the _____.
2. The atmosphere is made up of a _____.
3. Water in gas form is called _____.
4. Examples of tiny solid pieces in the atmosphere are _____,
_____, and _____.
5. Most of the atmosphere is made up of the gas _____.

6. Nitrogen makes up about _____ of the atmosphere.
7. The gas needed by all living things is _____.
8. Oxygen makes up about _____ of the atmosphere.
9. Unwanted gases and solids in the atmosphere cause _____.
10. Three causes of pollution are _____, _____, and _____.

MATCHING Match the two lists. Write the correct letter on the line next to each number.

- | | |
|--|--|
| 1. _____ atmosphere | a) needed by all living things |
| 2. _____ water vapor | b) tiny solids in the atmosphere |
| 3. _____ oxygen | c) mixture of gases that surrounds the earth |
| 4. _____ dust, pollen, and smoke particles | d) unwanted dust and gases |
| 5. _____ pollution | e) water in the gas form |

TRUE OR FALSE Write T on the line next to the number if the sentence is true. Write F if the sentence is false.

1. _____ Every ocean can be seen.
2. _____ Every ocean is wet.
3. _____ You are sitting in an ocean.
4. _____ The atmosphere is an ocean of gases.
5. _____ Most of the atmosphere is oxygen.
6. _____ Oxygen makes up about 21 percent of the atmosphere.
7. _____ Only animals need oxygen.
8. _____ Water vapor is a gas.
9. _____ Some dust is a natural part of the atmosphere.
10. _____ Pollution is a natural part of the atmosphere.