

What is Air Pressure?

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Name: _____

Date: _____ Period: _____ NB#: _____

1. _____ is the force applied by the air above you.
2. Since air has _____, it exerts pressure by pushing down on us.
3. It is estimated that we have approximately _____ kg of air pushing down on our heads.
4. Atmospheric pressure is also known as the _____ of the air pushing on the Earth's surface as it is pulled to the Earth's surface by _____.
5. What keeps the molecules moving around in all directions? _____
6. So, air pressure is not just pushing down, but atmospheric pressure acts with equal force in _____ direction.
7. The higher you travel in the atmosphere, the **lower/higher** the air pressure will be.
8. This is because as you travel higher, you have **fewer/more** air molecules above you.
9. At sea level, the air is more compressed than at higher altitudes. Therefore, the air at sea level is _____ at sea level than at higher altitudes. It would be heavier for its size or volume.
10. The first barometer was invented in 1643 by _____.
11. It was a long glass tube in a dish filled with _____.
12. At the top of the inverted tube was a space that had no matter in it, not even air. We call this kind of space a _____.
13. The mercury does not all fall out of the tube because _____ is pushing down on the mercury left in the bowl.
14. The air pressure of a column of atmosphere that is 1 cm² and the the column of mercury both have the same mass, which is _____ kg. Therefore, they are balanced.
15. If the atmospheric pressure happened to get a little higher, then the mercury in the tube would be **lower/higher**.
16. The type of barometer that operates by a needle connected to a spring being pushed by air pressure exerted on bellows is called a(n) _____.
17. The advantage of this type of barometer is that it is _____ and more _____.

18. This type is used in a _____ when an electronic sensor and a transmitter are attached to send pressure data back to the station.
19. A barometer can be used to determine elevation to aid airplane pilots. This is called an _____.
20. Average atmospheric pressure at sea level is _____ bar.
21. One bar is equal to _____ millibars.
22. They say that standard pressure is actually _____ mb.
23. So, if the air pressure is reported to be 1019 mb, then it is slightly _____ than normal.
24. If the air pressure is reported to be 1006 mb, then it is slightly _____ than normal.

Think Questions:

25. When you drive up a mountain, what makes your ears feel strange? Where is pressure higher or lower?
26. Why doesn't air pressure crush an empty pop can?
27. If a meteorologist says that the air pressure is getting lower, what would you expect to see happen to Torricelli's mercury barometer?
28. If you were to drill a little hole at the top of the glass tube holding the mercury in the barometer, what would happen to the barometer?
29. Suppose you blow up a balloon and take it on an air plane ride. What would you observe happen to the balloon as the plane rises into the air?
30. Why is it so important for astronauts to have space suits that regulate pressure?