

Name: _____

What is a gas?

Our atmosphere is a gaseous ocean of air that surrounds the earth. It is made up of tiny, invisible *gas* molecules that are kept from drifting off into space by the earth's gravitational pull (gravity).

In this *Fun Science Demos* video, Jared talks about *gases* and why they qualify as matter: <https://www.youtube.com/watch?v=EDTF6l2WhYo>

After watching the video, fill in the blanks below with these words:

***carbon dioxide cool dropped energy float gas heavier invisible
air liquid matter not oxygen soap solid space vinegar***

1. Pretty much everything in the universe is either matter or energy. Light, heat, sound and electricity are forms of _____.
2. _____ is made of tiny particles (atoms and molecules) and takes up space. Most matter exists in one of three states (forms) _____, _____, or _____.
3. _____ is one of gases that make up earth's atmosphere; we need it to live.
4. We make the gas _____ in our bodies and breathe it out into the air. In the video, Jared made carbon dioxide by combining baking soda and _____.

Carbon dioxide is an invisible gas, so how did Jared prove to you that it was there in the bottom of the tank? He used bubbles.

5. A bubble is a thin layer of _____ with _____ trapped inside.
6. The first time Jared blew bubbles into the tank, they _____ to the bottom. Why? Because the thin layer of soap made the bubbles heavier than plain air.

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7. When Jared blew bubbles into the tank containing carbon dioxide, the bubbles did _____ sink to the bottom. Why? Because the layer of carbon dioxide gas was taking up _____ in the tank and kept the bubbles from hitting the bottom.
8. So, what did Jared show? That the invisible carbon dioxide gas was really in the tank because it took up space. Carbon dioxide is matter. It's made of tiny molecules that take of space.
9. But why did the carbon dioxide gas stay in the tank? It stayed there because it's _____ than air, so it sinks to the bottom of the ocean of air around it.
10. Helium is an invisible gas made up of tiny helium atoms. When balloons are filled with helium gas, these tiny atoms fill the space inside the balloon. But helium atoms are lighter than the molecules that make up air, so helium filled balloons _____ on top of the heavier air molecules.
11. So, what should you take away from all this? Gases are _____, we can't see them, but they are there. They're matter just like solids and liquids that you can see and touch. Why? Because, like all matter, they have mass—i.e. they're made up of tiny atoms and molecules—and they take up space.
12. Science is so _____.