Name: _____ *More About Air* (Videos and Questions)

The air that surrounds our planet is made up of a mixture of gases, mainly oxygen and nitrogen. All living things need both oxygen and nitrogen to survive.

Just like solids and liquids, gases are made up of tiny particles of matter called molecules. In the video on gases, Jared demonstrated (showed) that these tiny, invisible, gas molecules take up space.

In this next video, Jared demonstrates that air has weight. Weight is just a measure of how much gravitational *pull* the earth exerts on something. This *pull* depends upon how much *matter* (stuff) the thing is made of ***and*** upon its distance from earth's center. Near the earth's surface, all matter has weight.

Air Has Weight: https://www.youtube.com/watch?v=o5LT_wfI98w

matter ***heavier*** ***space*** ***weight***

Jared made a balance scale and attached a balloon filled with air on each end. The air molecules inside the balloons take up _____. When Jared lets the air out of the balloon on one end of the balance, the balloon on the other end dips down. The balloon with the air inside is _____ than the empty balloon. This is because the air inside the balloon is made up of tiny particles of _____. And near the earth's surface, all matter has _____.

In this video, Jared takes another look at air and explores some of its properties.

Exploring Air: https://www.youtube.com/watch?v=Grziaq-caVE

air ***space*** ***filled-up*** ***invisible*** ***pushed*** ***escape*** ***blown-up***

In this demonstration, Jared first stuffed an empty balloon down a plastic bottle and stretched the balloon's opening over the opening at the top of the bottle.

Air is _____, but it is all around us, pushing on us from all directions. Even though the bottle looked empty except for the balloon, _____ was also in the bottle. When Jared tries to blow up the balloon, it does not work. Why? Because the air already in the bottle was taking up all the _____ inside, and Jared couldn't blow hard enough to force any more air in.

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air space filled-up invisible pushed escape blown-up

Jared then did the same thing again, but this time the bottle had a tiny hole in it. Now, he was able to blow up the balloon. Why? Because the hole in the bottle allowed the air inside to _____. The balloon _____on the air inside and forced it out of the bottle.

While Jared was blowing air into the balloon, he was pushing harder on the air inside the bottle than the air inside was pushing back. But once he stopped blowing, air rushed back into the bottle and pushed the air in the balloon out again.

When Jared blew up the balloon in the bottle with the hole and then quickly covered the hole with his finger, the balloon stayed _____. No air could get into the bottom of the bottle and push the air in the balloon up and out.

When Jared sucked the air out of the bottle through the hole in the bottom, the balloon _____ with air. Where did the air come from? Air from the room came in from the opening at the top of the bottle and filled the balloon.

So, what should you take away from all this?

Air is matter and takes up space. Air molecules that are crowded together want to spread apart so that they have more room to move about. They do this by moving to a place where there are fewer molecules and/or less pressure.

SCIENCE IS SO COOL.