What's Matter? - Crash Course Kids #3.1

Physical Science
https://youtube.com/watch?v=ELchwUIlWa8
https://nerdfighteria.info/v/ELchwUIlWa8

[Intro]
Hey, what's matter? No, no, not what's the matter. Obviously since you're here with me, you're pretty awesome at the moment. You might have heard that everything is made of matter. That's true. You, soccer balls, eyeballs, even your pet, Fluffy, all made of matter. So, that's interesting, but what is matter exactly?

===== What is Matter? (0:30) =====

The scientific answer is that matter is anything that has weight, and takes up space. You already know about weight, right? That's just how heavy something is. Like if you've ever been to the doctor's office. The first thing they do is have you stand on the scale so they can measure how much you weigh. As for taking up space, another way of thinking about it is that all matter has volume. It simply fill the area it's in. If you pour water into a glass, for example, the water's volume is the amount of space that it takes up in the glass. So, all matter has volume and weight, but it sure doesn't all look the same. Well, that's because matter comes in different forms, or 'states'.

===== Liquids (1:08) =====

Liquids are a state of matter that I'm sure you're familiar with. If you've every poured yourself a drink while trying to watch TV, you might have noticed that liquids take up space. Because, once the space inside your glass is full... GAHHHH! Right on the carpet. Sorry, mom. You also know that water has weight, if you carry a water bottle. As you drink from it, it gets lighter because you are removing water from it.

===== Solids (1:30) =====

Solids are matter too, of course. Probably the most obvious kind. Rocks are solid, so is ice, which is just solid water. Soccer balls are solid, iPads, your pet Fluffy, every single guy in One Direction. And just like rocks, all those things have weight and take up space. Now, you know what's weird? Sometimes matter can't be seen or felt, but it's there, like the air we breathe.

===== Gases (1:52) =====

Air is an example of gas, the third main state of matter. And I probably know what you're thinking. How do we know air - or any gas, really - is there if we can't see it? Well, we can prove it by doing an experiment. Science!

===== Investigation: Is Air Matter? (2:09) =====

Let's start by asking the question. Is air matter? Because if it is, it should take up space and have weight, right? To see if air take up space, lookit. I can easily drop an empty balloon into this little box, but a full one won't fit. That's because the air that fills the space inside the balloon is bigger than the space inside the box. Now, does air have weight? Let's try something else. Take two empty balloons and tape them to the ends of a meter stick. Then we'll hang the meter stick on a string to that it's perfectly balanced. Now, let's see what happens if we blow up just one of the balloons and put it back on our meter stick. Check it out. The end with the full balloon sinks. It weighs more than the empty balloon because the air gives it extra weight.

===== Conclusion (2:55) =====

The balloon full of air will always weigh more than the empty one. Because air is matter, and matter has weight, and takes up space, whether it's a liquid, a solid, or a gas. So listen. The next time someone tells you that something doesn't matter, you can tell them, to there face, that, technically, everything is matter. And tell them Sabrina said so.