Hunting for Properties: Crash Course Kids #9.1

Physical Science
https://youtube.com/watch?v=ZZYnERZe3Cg
https://nerdfighteria.info/v/ZZYnERZe3Cg

(0:10) Hey guys! Remember what it was like in preschool? If you don't remember, here's a reminder. It was way easier. Playing with colored blocks, learning with shapes; Those were the days, good times.

But here's a fun fact: when you were learning how to put all those yellows blocks in a line, or stuffing square shaped blocks through a square hole, you were also learning something very fundamental, and that is how to judge an object's properties.

But what do we mean when we talk about the properties of stuff?
(0:39) Well, lets start with this, The stuff that makes up everything is called matter. Doesn't make any difference if its a tiny grain of sand or all of the air that surrounds the earth, everything is made of matter. And a property of matter is just any characteristic that we can list about it, like how it looks, feels, or acts. For example, my characteristics include having black hair, wearing glasses, having some wicked awesome nerd cred and well, you get the idea.

Properties of matter are also things that we can observe. This means that they have differences that are big enough to notice. For instance I'm currently observing that my desk is messier than it was 5 seconds ago. And to round it out, properties of matter are also able to be measured, that is, we can compare objects to each other. But instead of just looking at them and getting a general idea of how they compare, we measure them by using tools that give us values or numbers.

Now lets put all of these ideas to work by demonstrating how we can find a few basic properties of a simple object. Let me grab my measuring tape.

(1:41) Okay, okay look, I know I was just talking about how fun it was to play with blocks but let me be clear, I am not playing with these blocks. This is science people.

Now lets start with a couple of questions.

1) What properties does this block have?
well, there are some properties that we can observe but we can't really measure or describe them with numbers, like this block's color of what it's made of or even the fact that it holds its shape which makes it a solid.

So a better question to ask might be what can we observe and measure about this block?

Lets start with the big one here- Length.
Length is just the distance of something from end to end and this block's length is 8 and a half centimeter.

Width meanwhile it the distance of something from side to side and its width is 8 and a half centimeters.

Height! That's an easy one. It's the distance of an object from its bottom to its top, not to mention a major factor in being able to play basketball successfully and the height of this block is 9 centimeters.

So, length, width and height are some of the commonly used properties but there are a lot of others too. For instance, our block is also an object that is shaped like a box that takes up space, that is it fills up the space its in. We call that space the block's volume. We can measure the volume of this block using math based on the measurements I just made. But we could also to get a more general idea of its volume by making other observations like the medium block easily fits into the bigger block, so we know that the medium block has less volume than the bigger block. But there's no way that the medium block is fitting into the little block so we know that the medium block has more volume this small block.

Finally, weight is another measurable property of matter. Weight just tells us how heavy an object is. When you go to a doctor's office and they ask you to stand on a scale, they are using that scale to measure your weight. Got it? Good!

(3:29) So all matter has properties, and properties are observable, measurable characteristics that we can use to tell them apart. And we got to know the most common and useful properties that we can put a value or number on, like length, width, height, volume and weight.

So, hey, blocks- not just for little kids, also super handy for doing science.