Measurement Mystery: Crash Course Kids #9.2

Physical Science
https://youtube.com/watch?v=7omxmCDpW7U
https://nerdfighteria.info/v/7omxmCDpW7U

(Intro Music)

Sabrina: Have you ever gotten up in the middle of the night to use the bathroom and stumbled out of bed and then, *SMASH*! And then after that, "OW?!" Well, that has happened to me. In fact, just last night. Got up, went to get some water, and kicked something really hard. And now, my toe hurts. So bear with me. But if you're at all like me, having this happen to you likely brought a few things to your mind.

Like one, turning on the lights would probably have been a good idea. Two, "What did I trip over?" And three, "Who left it there?"

The second of these questions is pretty important because it's a question that's the essence of so much science. And that is, "What is this thing?"

No matter what that "thing" is, I can tell you that it's made up of matter and all matter has properties. Specific characteristics that separate it from other kinds of matter. If you remember from the last episode, properties are things we can observe and measure. Things like an object's length, width, height, and volume. But how can we use these kinds of properties to identify an object? I am so glad you asked. Because we're going to do a little investigation together.

So today we're going to solve the mystery of, "What did Sabrina trip over in the middle of the night?" And we'll do this by examining the properties of said mystery object, which I happen to have right here hidden under the cloth.

But before we start our investigation, did you know that there are different kinds of units that can be used to measure things? You can measure in feet or pounds, or gallons. If you wanted, I guess you could also measure in jelly beans, but that would take a long time. So we'll just go ahead and use the international standard units, also known as the metric system. You might know these units as meters, grams, and liters. And the markings on my measuring tape here divide a meter into 100 smaller pieces of equal size. Each of these is a centimeter; one hundredth of a meter.

Okay, now back to this mystery object. Feeling around, it's got nice straight sides and two sides are larger than the other two. That means we're dealing with a rectangle here. Now let's give those sides a measure. Looks like it's about 23 centimeters wide, about 30 centimeters tall, and about five centimeters high. So we have some measurements. That's a good start, but it's not enough to tell us what this thing is.

So let's measure another property, its mass. To do this, we need a different tool, a scale. And we'll use a different unit too. In the metric system the unit of mass is called a gram. A paper clip has a mass of about a gram. Whatever this is is kind of heavy. It's almost 3,000 grams.

So here we have an object that is pretty heavy, hard, smooth, and rectangular. Let's see, what other objects do I know of that fit that description? Tennis racket? Nope. It's not my socks or my stuffed panda, and we've already ruled out my tablet. Oh! I know! It's my science book! I was doing a little reading last night and put it on the floor before I turned the lights out.

So we've been able to identify a mystery object by observing and measuring its properties. We used units in the metric system to put values on properties such as grams for mass, and centimeters for length, width, and height. And those numbers gave us enough clues to solve the mystery of what I kicked in the dark. So remember, when it comes to measuring think metric. And when it comes to identifying objects, take a tip from me. Avoid identifying them with your toe.

(Outro Music)