Defining Gravity: Crash Course Kids #4.1

Physical Science
https://youtube.com/watch?v=ljRlB6TuMOU
https://nerdfighteria.info/v/ljRlB6TuMOU

[upbeat intro music plays and stops]

SABRINA: If I told you that you just won the lottery what would you do. If you're like me you'd jump up and down and scream. And after you were done freaking out and jumping in the air, you'd land on your feet, right?

But why would you land back on the ground instead of just floating off into space?

[happy transition music plays and stops]

SABRINA: It's because of a little something we call gravity. Gravity is what pulls everything toward the ground, including you. Without the force of gravity, there would be no life on Earth. Air, water, animals, everything would fly off into space. There'd be no you, no me, no french fries, nada.

Think of gravity like the invisible super glue that holds our massive world together. You can't see it but it's always there. An English scientist named Isaac Newton was the first person to seriously study gravity, over 300 years ago. There's a famous story about him that you might of heard. Supposedly, Sir Isaac was hanging out underneath an apple tree, thinking, probably partly napping, when an apple fell from the tree and conked him on the head.

That's when Sir Isaac had an Ah-ha moment. Why did the apple fall down to the ground, and not up, or sideways. He realized that a spacial kind of force, which we now know is gravity, was acting on all of the objects on Earth, pulling them toward it. Once the apple became too heavy for its stem to hold it any more, the gravitational pull of Earth brought the apple down onto Newton's noggin. Newton's also realized how *heavy* an object is either. Whether you are holding an apple, a bowling ball, or a feather, you let go of it that sucker is going down.

We're gonna make a whole video about this later, but basically he determined that what goes up, must come down. Sir Isaac was a pretty smart dude.

Okay, so you know that if you jump up, you'll eventually land back on the ground. And you know that apple dropped down will land back on the ground too. But what if you throw something in front of you? Or to the left? or the right?

[jaunty bass guitar plays and stops]

To see how gravity will act pick up a tennis ball or any small round object and hold it in your hand. Let's toss it in the air and watch it fall to the ground. No surprise here. Okay now pick it up and hold it over you head and watch it fall once more. Again not a shocker. Now throw it to your left, ball down. Pitch it to the right and watch it go down again.

[mellow computerized strings play and stops]

No matter where you throw the ball, it's going down. So we've determined that near the surface of the Earth, where we all are, gravity is the cause the produces the effect of all unsupported objects falling down. The ball will go up or to the left or to the right for a little bit but eventually it's going to be pulled back down to the ground no matter what.

Gravity's got a hold on, well, everything.

[upbeat outro music plays]