



## How to Make a Crater - Transcript

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### **Ota Lutz (NASA/JPL Education Specialist):**

Hi! We're here today with a fun and educational activity that you can do at home, at school or even at camp.

And it involves making craters. Go outside tonight. Take a look at the moon and you'll see these circular features with lines coming out. Those circular features are craters.

And the lines coming out are ejecta patterns - "rays."

The way those craters were formed were from rocks coming from outer space and smashing in to the surface of the Moon, pulverizing the soil there, what we call "regolith," and spraying it out along those ejecta pattern rays.

You can make your very own craters. You start with about an inch of some flour, spread out nice and smooth, and then take something that is of color, like, these are little cake sprinkles, and, kind of, just sprinkle them evenly over the surface.

Then you need another layer. And what we've selected is cocoa.

You can sprinkle it with your spoon, or sift it over the top, which will make a more even surface.

To simulate a rock impacting a surface, drop them from a reasonable height.

I'm gonna use this big rock first.

As you can see, this impactor made a very nice crater. This indentation is the crater.

The impactor, the rock, is outside because it actually bounced out. That happens sometimes in real life.

And you see that it threw out a bunch of the subsurface material. And we have our own little geologic excavation.

The white things coming out, those are the rays, just like you see on the moon.

And some of our sprinkles got thrown up. And that represents the mineral diversity of the surface that was impacted.

Not all meteorites come in perpendicularly. Sometimes they come in at an angle.

Take it and kinda chuck it at an angle.

You see that the ejecta pattern is a little bit different. Notice there are no ejecta rays on this side.

They're all on that side. From looking at a crater, something we can tell is what sort of angle an impactor came in at.



Remember, you can experiment by trying different layers of materials to put down in your pan to impact with different rocks.

You can use different size rocks. You can try dropping from different heights or throwing at different angles.

And then take a look at your ejecta patterns and see what that tells you about the crater.

So, have a good time experimenting and we'll catch you next time.