

ACTIVITY 2: Crater Creators

Make An Impact!

Impact craters are created when an object like a meteorite crashes to the surface of a moon or planet. This doesn't happen very often on Earth today, and most impact craters that formed early in Earth's history have been erased by plate tectonics and erosion. We can still see many ancient impact craters when we look at places like Mars or Earth's Moon. Meteor showers, like the Phoenix meteor shower Rocket mentions in the book *Rocket Says Look Up!*, happen when tiny meteorites the size of dust grains burn up in Earth's atmosphere.

This activity will focus on the important STEM skill of making predictions. Youth should be encouraged to make predictions and explain why they think something is going to happen. Youth can also compare and contrast what they see in the experiment.



Materials

- ☐ Flour
- ☐ Pie tins
- ☐ Wood balls
- ☐ Ping pong balls
- ☐ Marbles
- ☐ Tablecloth

Set up 3 stations before the program. Each pie tin should hold about an inch of flour.

SAFETY NOTE: Marbles are a choking hazard. If your program has very young participants, marbles may be omitted from this activity. This activity uses flour as a base to simulate the moon's surface. Please be aware that flour contains gluten, which may pose an issue for individuals with gluten sensitivities or allergies. Alternatives to flour can include gluten-free flour, cornstarch, baking soda, or sand. Before beginning the activity, consider the needs of participants and choose the materials that work best for everyone.

Station 1: Flour in pie tin, wood balls

Station 2: Flour in pie tin, ping pong balls

Station 3: Flour in pie tin, marbles (*omit this station if very young children are present*)

► **Explain and Discuss:** Families will be doing an experiment to make impact craters, just like Ellie and Isaiah did in the episode of *Book Drop*.

- An important part of science experiments is making a prediction. Discuss predictions (**a prediction is when you make a guess at what you think is going to happen**).
- Predictions are usually not all the way correct, but this is an important part of science! It's ok to not be correct!
- **Observe.** For today's experiment, let's start by making observations about the things we are going to use in our experiments. Let youth and families see and hold the wood beads, ping pong balls, and marbles. Have youth share their observations about the balls and encourage them to make comparisons. Example: the wood bead is about the same size as the ping pong ball, but the wood bead is heavier. The marble is smaller than the other balls, but heavier than the ping pong ball. Youth should also make observations about the flour.
- **Note:** this observation phase is best done in a way that they are not yet doing the experiment. Let them observe the balls first (**with the flour being kept away**). Then collect the balls and let them observe the flour.