

## Activity #1 - Cereal Box Marble Run

Have fun creating a marble run and explore gravity and inertia in the process!

According to NASA, **gravity** is “the attractive force between any two massive objects” and **inertia** is “the tendency of an object to maintain its state of motion.” The marble uses both of these concepts. First, gravity causes the marble to roll down the slope due to the weight of the marble. It will do this as long as the ramp has an incline. Inertia is also important because the marble will stay in motion as long as it doesn’t hit into anything to make it stop. Once the marble hits the bottom of the box, there is no longer any force to keep it going and it has no other way to maintain motion.

### Materials Needed

- Cereal Box
- Scissors
- Tape
- Marbles or small balls

### Directions

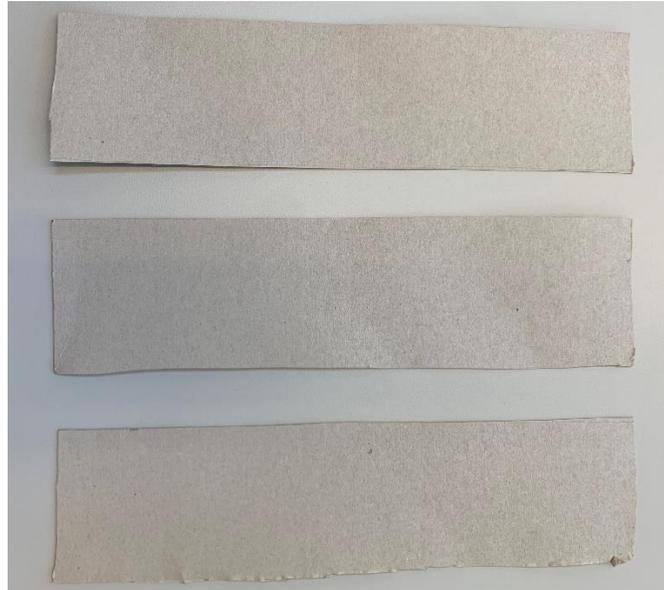
1. Find an empty cereal box!
2. Cut the front of the box off, leaving about a half inch at the very bottom to catch the balls.



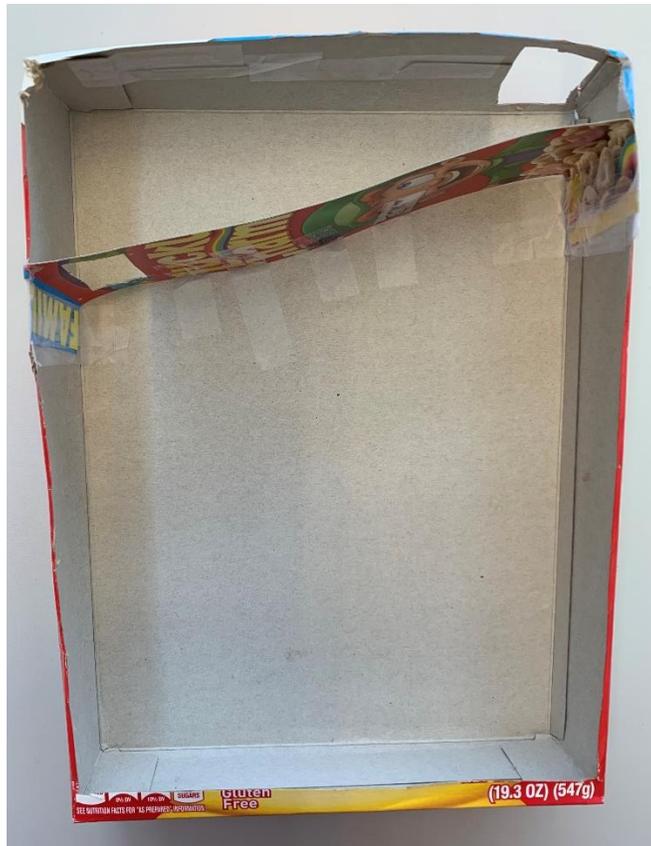
3. Tape the top of the cereal box closed. Cut a hole on the right side where you will drop the marbles or balls through.



4. Divide the front of the box that was cut off into three parts to create the ramps.



5. Bend the edges to attach to the inside of the box with tape. These will be taped at an angle. The first ramp should begin in the top right corner where the marbles are dropped. Before taping, cut a hole at the bottom of each ramp.



- Repeat for the next two ramps. Once the ramps are taped, you can begin using your marble run! Make adjustments to angles as needed. Add tape for more reinforcement if the cardboard isn't staying attached. If it isn't working as intended, what can you do to make other adjustments?



**Additional Resources:**

[https://www.nasa.gov/pdf/544901main\\_PS5\\_GravityGames\\_C1\\_Final.pdf](https://www.nasa.gov/pdf/544901main_PS5_GravityGames_C1_Final.pdf)

<https://science.howstuffworks.com/innovation/scientific-experiments/newton-law-of-motion1.htm>

<https://www.youtube.com/watch?v=03DiH1m6hvc>

<https://thepinterestedparent.com/2016/02/cardboard-box-marble-run/>