

Gravity Bowl

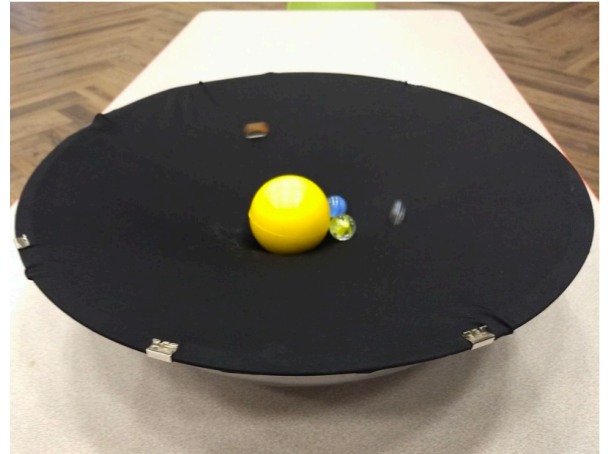
Ever wonder why rocks fall toward the ground? Or why planets orbit around the Sun? It's because gravity really makes things come together! The force of gravity is a result of mass—such as a planet—bending space. In this experiment, the mass of the Sun bends space, causing Earth and all other planets to orbit around it. Earth also has gravity, which draws us toward the ground and causes objects to fall downward.

Materials needed:

- Large bowl
- Stretchy fabric to cover the bowl
- Several binder clips
- 1 slightly heavy rock
- Several marbles

Step-by-step instructions:

1. Stretch fabric (representing space) tightly over the bowl.
2. Attach fabric around the edge of the bowl using the binder clips.
3. Place the rock (representing the Sun) in the center of the fabric.
4. Place a marble (representing a planet) anywhere on the fabric and observe.
5. Toss another marble sideways along the fabric and observe.



Additional explorations:

- Roll marbles around the rock in two different directions at once and explore what happens.
- Remove the rock and place marbles on different parts of the fabric. How do they move? Do the marbles end up together?

Discussion questions:

- In our model, the marbles quickly fall toward the Sun. Why do you think planets orbit the Sun instead of falling into it?
- How does a bigger, more massive object stretch space compared to a smaller object?
- If everything with mass has gravity, including our bodies, why don't objects fall toward us instead of the ground?