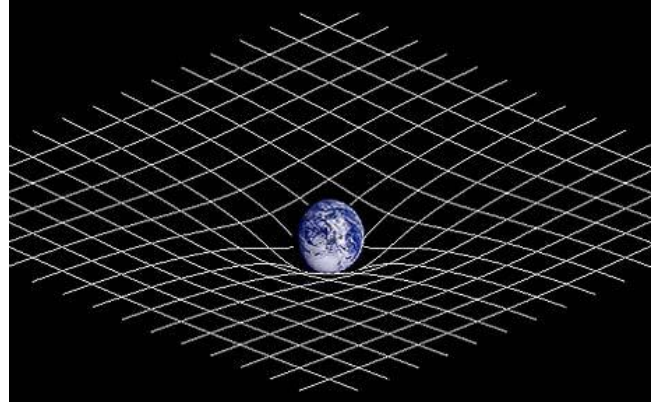


DIY GRAVITY WELL

Children learn that gravity makes things fall, but in actuality it is an attractive force between two objects. The larger object has a bigger effect on the smaller object. This activity helps to illustrate the force of gravity by showing an object's effect on a stretchy cloth. Other objects (marbles) can be rolled around the larger object (golf ball) to show how gravity keeps objects in orbit.

Materials needed:

- Stretchy cloth (spandex or nylon)
- Heavy ball (golf ball or similar)
- Marbles
- Rubber band or clips to hold fabric in place
- Large round mixing bowl (12" diameter or bigger)



Instructions:

1. Place cloth on top of bowl and secure either with a large rubber band or clips so the fabric stays in place. Make sure it is taut!
2. Add the heavy ball to the center of the cloth
3. Place the marble at the edge of the bowl and let it fall straight to the center
4. Place the marble on the cloth and roll it sideways allowing it to orbit the ball

Space Science Tie-In:

Gravity is like a cloth and objects with mass (such as our heavy ball) bend the cloth. Objects far away from the heavy ball will not be affected by its gravity, but objects (the marbles) close to it will feel its pull.

So why does Earth not just crash into the Sun? The reason is if an object has an initial velocity, it can stay in orbit without falling into the larger object.

Ways to Expand this DIY:

You can create larger gravity wells with other objects such as a hula hoops or PVC pipes! Experiment with different sized and weighted objects and also increasing the amount of objects you throw into the well.