

## Materials

- Paper Plate
- Marble
- Pair of Scissors

**1** First, test your marble. Set it on a flat surface and gently roll it forward. What happens? Does your marble roll in a straight line or wobble around? Your marble should roll in a straight line.

**2** Now, set the marble on the rim of the paper plate. Roll it forward. What happens this time? How has the paper plate changed how the marble rolls forward? The marble's path is curved now, as it is following the rim of the plate.

**3** Cut out a quarter of the paper plate. Roll the marble on the rim of the paper plate again. What happens now that a piece of the plate is missing? Does the marble's path still curve? The marble will roll off the plate and continue rolling in a straight line, like before on the table.



By rolling the marble, we are recreating how objects in space **orbit** planets and stars. Earth and the other planets in our solar system orbit the Sun. Things like spacecrafts orbit Earth. In this experiment, the marble represents a space shuttle. A space shuttle can fly straight in space. Once it's in Earth's orbit, however, the space shuttle is pulled towards the planet by Earth's gravity. The space shuttle will continue to orbit until something disrupts gravity and allows it to fly straight again.