

## Balloon Hoverboard

Suggested Age / Grade Level	Curriculum Covered	Duration
7-14	<ul style="list-style-type: none"> <li>- Isaac Newton's biography and impact</li> <li>- Newton's 3 laws of motion</li> </ul>	40 minutes - 1 hour

### Overview

Students will be introduced to the scientist Isaac Newton, along with his contributions and impact on science. They will also learn about Newton's 3 laws of motion. The concept of inertia will also be taught to allow for a better understanding of motion.

### Learning goals

- Knowing about Isaac Newton and his contributions to science
- Understanding all 3 laws of motion and being able to connect them to real-life situations
- Understanding the concept of inertia

### Background Information

Students should be familiar with the concept of forces and the fact that they act on objects.

### Key Terms

**First Law of Motion/Inertia:** An object in motion will continue to move at a constant speed along a straight line unless acted upon by an external force. An object at rest will stay at rest unless acted upon by an external force

**Second First Law of Motion:** The net force acting on an object is its mass multiplied by its acceleration

**Third Law of Motion:** Every action will have an equal and opposite reaction

### Activity Timeline/Agenda

- Watch video (6 minutes)
- Activity (20-30 minutes)
- Discussion (15-20 minutes)

### **Materials**

- 1 pop up bottle cap
- 1 balloon
- 1 CD
- Tape or glue

### **Procedure**

1. Tape the pop up bottle cap to the middle of the CD. Make sure that the CD's hole is completely covered and that the cap is in the open position
2. Blow up the balloon and pinch the narrow end so that no air escapes
3. While pinching the narrow end, wrap the opening of the balloon around the bottle cap
4. Let go of the balloon to allow the cd to "hover" above the surface