BIKE WHEEL GYROSCOPE

HARMONY PBL LEVEL III PROJECT

Watch my video

Visit my website

Introduction and Materials

The law of conservation of angular momentum states that when no external torque acts on an object or a closed system of objects, no change of angular momentum can occur.

- Bicycle Gyroscope
- Pull Cord with handle
- Suspension Cord with Handle
- Bicycle Counterbalances
- Rotating Chair

What's Going On?

The bicycle wheel, the stool, and you comprise of a system that obeys the conservation of angular momentum. This means that any change in angular momentum within the system must be accompanied by an equal but opposite change so that the net effect is zero. One way to change the angular momentum of the bicycle wheel is to change direction. To do this you must exert a twisting force, called a torque on the wheel. The bicycle wheel will then exert an opposite and equal torque back on you. The change of angular momentum is compensated for by your own change in angular momentum.

How Does It Work?

The steps are:

- Sit on the rotating chair.
- Spin the bike wheel as fast as you can (Or have some one spin it for you, while you hold it by the handles.)
- Tilt the wheel left, and you will go right.
- Tilt the wheel right, and you will go left.

Safety Precautions:

Don't try to stop the wheel while it's spinning really fast!