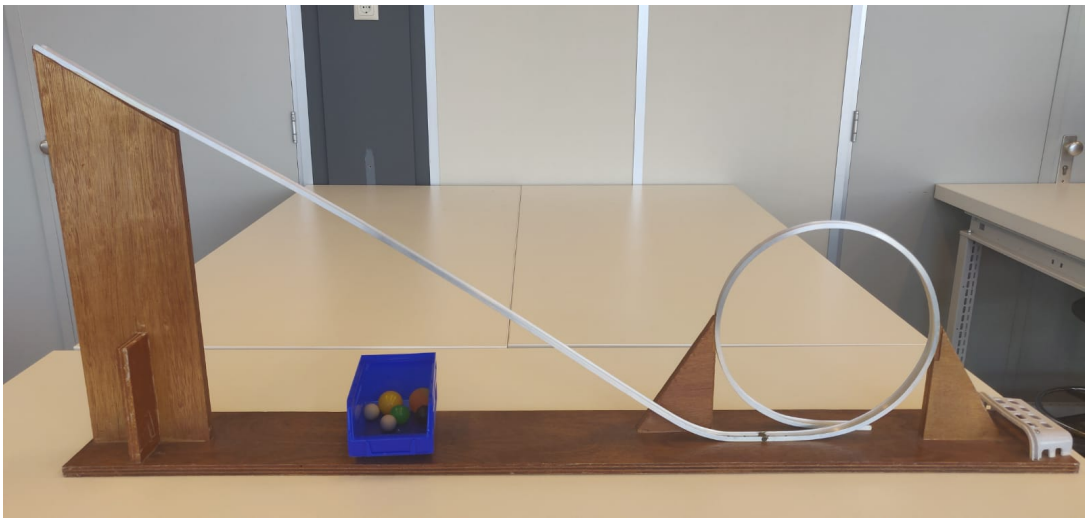
Loop-the-loop

Key words: conservation of energy, centripetal force, mechanics, loop the loop,



Equipment List:

1. Loop the loop setup (track secured to base)
2. Balls of various masses and diameters

How to assemble and operate:

- Place ball at top of track
- Release the ball, and observe it complete the full loop
- Repeat for different balls, observe differences
- Release ball from different starting points on track, observe differences.

Description/Theory:

This demonstration illustrates energy conservation in an object undergoing rotation, as well as centripetal force. The forces and energy types involved are (translational and rotational) kinetic energy, (gravitational) potential energy and centripetal and normal forces.

Comments/Notes:

The balls can sometimes fly off the track during the loop, so be prepared to repeat the same procedure a couple of times. Some of the balls are quite bouncy, and may bounce around on the floor if not caught by the basket at the end of the track.