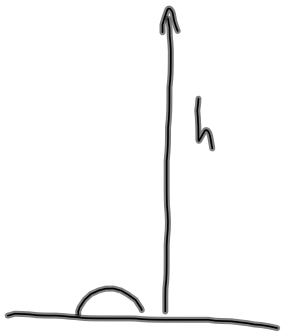
Popper Physics



2 Stages to the motion:

① popping (pushing off the table)

② in the air ($a = -9.81 m/s^2$)

Find the velocity when the popper left the table?

$V_1 = ?$

$V_2 = 0$

$\Delta d = 135 cm$

$a = -9.81 m/s^2$

$V_2^2 = V_1^2 + 2a\Delta d$

$V_1^2 = \cancel{V_2^2}^{0} - 2a\Delta d$

$V_1^2 = -2a\Delta d$

Chapter 4 - Introducing Forces

Inertia - see p126 for definition

Galileo's perception of inertia - see p127

Common forces - Weight
Friction

Weight - the force of gravity that acts on a mass. (N)
- depends on location

Mass - the amount of matter in an object. (kg)
- does not depend on location.

$$\vec{F_g} = m\vec{g}$$

Newtons

where $\vec{F_g}$ is the weight of an object (N)

m is the mass (kg)

$\vec{g}$ is the acceleration due to gravity

9.81 m/s^2 (near the Earth's surface)

[down]

	F_g (N)	÷9.81 → m (kg)	×2.2 → m (lb)
T	590	60.1	132
C	745	75.9	167
G	995	101	223

MP|135

$m = 4.0\,kg$

moon

$\vec{g} = 1.64\,m/s^2\,[down]$

$\vec{F_g} = ?$

$kg \cdot m/s^2 = N$

$\vec{F_g} = m\vec{g}$

$\vec{F_g} = (4.0\,kg)(1.64\,m/s^2\,[down])$

$\vec{F_g} \doteq 6.6\,N\,[down]$

TO DO:

① Popper Physics

② Graphs of Motion Review

③ PP|137