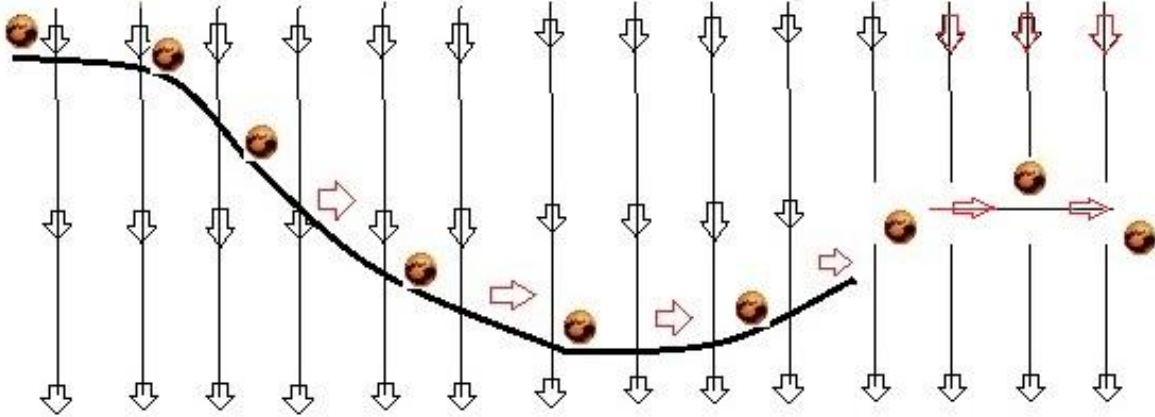


Marble Run

At the top of the track Earth's Gravity pulling down on the marble causes it to move forward along the path of least resistance.



At the end of the track the marble's velocity launches it into the air, but Gravity overcomes velocity pulling it down to Earth.

Invisible Forces

The invisible forces of **Gravity**, which attract everything toward Earth, are constantly pulling straight down on the marble on the marble track. This gravitational force creates **Potential Energy** in the marble. Resting on the track this **Potential Energy** is just sitting there ready to do something. The higher the **elevation** of the marble on the track, the greater the gravitational force and the more energy the marble has stored inside.

When it starts to roll, the marble's (stored) Potential Energy converts to another form of Energy called **Kinetic Energy** – energy in motion. The downward force of Gravity draws the marble down the hill. The steeper the slope, the faster the marble can move, creating more and more (Kinetic) Energy.

Acceleration is obvious when the marble speeds up. The hill of the track allows the marble to quickly descend, so it accelerates. The steeper the hill; the greater the acceleration, the more Energy it has, and the farther it will travel. If the track tilts up, gravity applies a downward force on the marble, so it **decelerate** (slows down).

Momentum, a term used to describe motion. The more momentum a marble has, the harder it is for a hill to slow it down and it will travel farther.

**The Force of Gravity
creates Potential
Energy in the marble.**

**High elevation, where
the forces of gravity
on marble is greatest.**

**Potential Energy
changes to Kinetic
Energy when it rolls.**

**Acceleration is when
the marble speeds up.**

**When the marble
slows down it
decelerate.**