



Pracovný list

Predmet: Fyzika
Názov tematického celku: Štruktúra a vlastnosti plynov
Názov učebnej látky: 2. termodynamický zákon
Trieda: sexta
Dátum: 3. 2. 2020

Perpetum mobile

Prvý termodynamický zákon – first law of thermodynamics

Druhý termodynamický zákon – second law of thermodynamics

Perpetum mobile prvého druhu – Perpetual motion of the first kind

Perpetum mobile prvého druhu – Perpetual motion of the second kind

A **perpetual motion machine** is a hypothetical machine that can do work indefinitely without an energy source.

This kind of machine is impossible, as it would violate the first or second law of thermodynamics.

These laws of thermodynamics apply regardless of the size of the system. For example, the motions and rotations of celestial bodies such as **planets** may appear perpetual, but are actually subject to many processes that slowly dissipate their kinetic energy, such as solar wind, interstellar medium resistance, gravitational radiation and thermal radiation, so they will not keep moving forever.

The **history** of perpetual motion machines dates back to the Middle Ages. For millennia, it was not clear whether perpetual motion devices were possible or not, but the development of modern theories of thermodynamics





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has shown that they are impossible. Despite this, many attempts have been made to construct such machines, continuing into modern times. Modern designers and proponents often use other terms, such as "over unity", to describe their inventions.

Basic principles

„Oh ye seekers after perpetual motion, how many vain chimeras have you pursued? Go and take your place with the alchemists.“

— *Leonardo da Vinci, 1494*

