

ISTITUTO COMPRENSIVO TRENTO 5
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Perpetual Motion

Project by

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Purpose

Finding out whether there may be a perpetual motion machine i.e., a machine that can do work indefinitely without an energy source.

Question

Is it possible to generate energy using gravity?

Hypothesis

No, it is impossible to create energy using gravity.

Materials

- a pump
- a turbine
- two containers for water
- two tubes
- four electric wires

Procedure

1. Fill the two containers with water and place them at 50 cm distance within each other on two surfaces at different heights to exploit gravity.
2. Connect the 2 containers via the pump and the turbine.

Results

Gravity *converts* energy from one form to another: when the water falls from one container to another, **gravity** converts **potential energy** into **kinetic energy**. This can drive a turbine and generate electricity. We talk of electricity as energy, so "gravity has generated energy". But it hasn't *created* any energy or added any energy. Conservation of energy applies. Therefore, for the machine to work we need to apply a battery.

Conclusion

Perpetual motion machines do not exist as they would violate the first law of thermodynamics or *Law of Conservation of Energy*: which states that energy cannot be created or destroyed in an isolated system.