

We are going to present a selection of simple physical experiments and explain them in terms of laws of physics. Most of the experiments are designed in a way allowing the student to repeat them at home. Calculations will be reduced to a strict minimum. However, we describe also phenomena that have much large scale (light years) or much smaller scale (nanometers).

**Program:**

1. Force and movement
  - 1.1 The basic concepts of mechanics
  - 1.2 Description and prediction of movement
  - 1.3 Matter and conservation rules
2. Vibrations and waves
  - 2.1 Periodic movement
  - 2.2 Resonators and waves
3. Heat and molecules
  - 3.1 Temperature and molecules
  - 3.2 Engines
  - 3.3 Organisation of matter
4. Fields and currents
  - 4.1 Electricity
  - 4.2 Magnetism
  - 4.3 Electrons inside matter
5. Visible and invisible light
  - 5.1 Properties of light
  - 5.2 Emission and perception of light

Description by Krzysztof Korona, November 2017