**Department:    Sciences**  
**Subject involved:    Physics, Technology, Mathematics, Informatics  
Participant teachers:   Nikos Skoulidis  
  
​Description of the activity**  
**Production of controlled gravity pendulums using exclusively mechanical parts  
Study of the pendulum oscillation and the dependency of its period on gravity  
Creation of a virtual extraterrestrial environment (eg moon like or Jupiter like.  
  
​Objectives  
The simple pendulum device (physics)**

* **Operation and characteristics**

**Mathematical Simulation (mathematics, informatics)**

* **The significance of simulation**
* **Creation of a mathematical model**
* **Use of spreadsheets for model implementation**

**Mechanical Simulation (physics, technology)**

* **Model transfer from design to device**
* **Experimental data collection**

**Outcomes  
Production of 4 sets of pendulums, each consisting of a low and of high gravity simulated pendulum  
Constructed from scrap materials –old and broken chairs, used phishing lines and sinkers  
Used in class for the study of pendulum’s characteristics**