Experiences:

1. GravityCube
2. ThreePlanets
3. InteractivePlanet
4. Ramp
5. Elastic
6. Anelastic
7. CannonBall
8. Pendulum

1)

The sum of kinetic and potential energy is always constant; kinetic energy depends on the velocity of the body, while the potential energy depends on his height with respect to the ground. Take through the trigger button the cube in front of you and look how the two bars will change!

2)

Each planet in the universe is attracted by other planets by the force of universal gravitation, which is inverse proportional to the distance between to the two bodies. Push the button in front of you and see how different distances between the planets result in a different velocity of the bodies!

3)

Each planet in the universe is attracted by other planets by the force of universal gravitation, which is directly proportional to the masses of the two bodies. Try to increase or decrease the mass of the little planet in front of you using the controller touchpad and see how different the planet movement results!

4)

The movement of a body on an inclined ramp is influenced by three factors: dynamic friction coefficient of the ramp, inclination of the ramp and mass of the cube. Try to understand how these three factors influences the movement of a cube, by clicking on the right button to change the friction or using the touchpad to increase or decrease ramp inclination and cube mass! And remember, the cube can stay still!

5)

When two bodies crash one against one other, in a fully elastic way, all the energy is transferred from the moving body to the stationary one without any dispersion, and the movement will continue infinitely. The momentum is directly proportional to the bodies volume, but if we change it the fully energy transfer works equally. Try it by yourself, by changing sphere masses through the controller touchpad!

6)

When two bodies crash one against one other, in a fully anelastic way, all the energy is equally divided between the two bodies, with continuous energy dispersion due to heat dissipations. The momentum is directly proportional to the bodies volume, but if we change it the energy transfer works equally. Try it by yourself, by changing sphere masses through the controller touchpad!

7)

A bullet shot through a cannon will move in a parabolic trajectory and can reach different distances depending on the starting inclination of the cannon. Try to change the inclination of the cannon through the controller touchpad and try to throw the bullet as far as you can!

8)

The period of a pendulum oscillation does not depend on the mass of the pendulum, but on the length of his rope. Try to increase the mass and the rope through the controller touchpad, and see it by yourself!