



EQ077EC

## Knowledge areas

Physics - Chemistry - Biology - Math & Science Fundamentals

## Key Experiments

The experiment of the Magdeburg hemispheres and atmospheric pressure

Inflating a balloon, reducing the external pressure

Chlorophyll, the substance found in most green plants

The decantation and filtration, two steps for the purification of water

How does the water cycle occur?

How do you identify the types of soil?

What are the structures of flowers like?

How are chromosomes divided?

Where are the bacteria?

Are all peas equal?

Are we all equal?

What is the probability? E rule and OU rule in genetics.

The frictional forces and Newton's first law of motion

The determination of the sliding static and kinetic friction coefficient

Dynamic determination of a coil spring K, mass and spring oscillator

The operation of a dynamometer, calibration of a rubber belt and a coil spring

Coil spring and Hooke's law

The equilibrium of a moving object on an inclined plane  
The mechanical advantage of a simple machine, inclined plane  
The principles of geometrical optics  
The reflection of light in a plane mirror and the laws of reflection  
An application of multiple reflections between flat mirrors  
The reflection in concave and convex spherical mirrors  
The refraction of light and the laws of refraction  
The spherical lenses and its main characteristics  
Vision defects, correction of hyperopia and myopia with lenses  
The refraction in a 90 degree optical prism  
Work and energy in a mass system and coil spring  
Determining the translational kinetic energy and potential energy of a sphere rolling on a ramp.  
Conservation of mechanical energy, moment of inertia.  
The power of a generator  
Electrification by friction, the principle of conservation of charge, law of charges

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