



## EQ077C

### Knowledge areas

Math & Science Fundamentals

### Key Experiments

The touch of each of us

Water is necessary for the germination of seeds

Force, mechanical deformation, plastic deformation and elastic deformation

Sunrise and sunset in the North Pole

Sunrise and sunset in Fort Yukon - Alaska - USA, Arctic Circle

Sunrise and sunset in Havana, Cuba

Sunrise and sunset in Macapá - Amapá, Brazil

Sunrise and sunset in Ubatuba - São Paulo, Brazil

Sunrise and sunset in Porto Alegre - Rio Grande do Sul, Brazil

Sunrise and sunset at Amundsen Scott Station - Antarctic Circle

Sunrise and sunset in your city

The construction of a sundial

The phases of the Moon

The operation and use of the compass

Identifying objects by the sound

The shape of objects

The vertical position of objects

The arrangement of objects on flat surfaces  
The solids, liquids and gaseous bodies  
The energy of moving air  
The horizontal surface of still water  
Melting of ice, fusion may be faster or slower (do it on a sunny day)  
Condensation of water  
Bass and treble  
Separating objects with the use of a magnet  
The light, the transparent, translucent and opaque means  
Producing oxygen by a chemical reaction  
The decantation and filtration, two steps for the purification of water  
The experiment of the Magdeburg hemispheres and atmospheric pressure  
Inflating a balloon, reducing the external pressure  
The leveling of liquid surfaces in open communicating vessels  
The thermoscope and thermometric scales  
Vision defects, correction of hyperopia and myopia with lenses  
Electrification by friction, the principle of conservation of charge, law of charges  
Influence of the minimum launch time in a looping  
The frictional forces and Newton's first law of motion  
The equilibrium of a moving object on an inclined plane  
Archimedes' principle  
Fusion, the change from solid to liquid state  
Dilation, the increase in the volume of water when freezing  
The general properties of matter  
The specific properties of matter  
The moving water and some consequences  
Some transformations of energy: the candle produces light and heat when burning  
Noting the compressibility and the elasticity of air  
Inertia, one of the general properties of matter - Newton's first law  
Pascal's law, the hydraulic lift  
Difference between heat and temperature  
The physical states of water  
Boiling and condensation of water  
The principles of geometrical optics  
The composition of colors in a Newton Disk  
Electrical conductors and electrical insulators  
The links in series, in opposition and in parallel between cells  
The mapping of the magnetic field of a magnet, magnetism  
Permanent magnets, temporary magnets and the electromagnet  
The operation of a hydroelectric plant and the blackout  
Pulse, frequency and wavelength of a spring  
Producing and identifying the waves on a long spring  
The standing wave in a long spring  
Sound, a longitudinal mechanical wave  
The Doppler effect, with tuning fork  
The power of a generator  
Some measuring instruments - How do you compare volume measurement scales? Part I of II  
Condensation, the change from gaseous to liquid state  
The determination of the density of a liquid by an aerometer  
How do you perform the separation of heterogeneous mixtures by simple filtration? Part I of V  
How to separate heterogeneous mixtures through magnetic separation. Part II of V

How to separate homogenous mixtures using paper chromatography. Part I of II

How do you list the properties of substances by electrical conductivity?

How to identify homogenous and heterogeneous systems

Classification of inorganic reactions – How does the reaction of hydrogen displacement (simple exchange) occur? Part III of IV

Classification of inorganic reactions – How does the formation of precipitates (double exchange) occur? Part IV of IV

Inorganic chemical functions - How do acids and bases behave in relation to different indicators? Part I of II

Inorganic chemical functions – How to obtain an acid oxide. Part II of III

Inorganic chemical functions – How to obtain a basic oxide. Part III of III

Chemical kinetics - Catalyst

Construction of three-dimensional organic structures.

Organic functions - Alcohol - Water absorption

How do you classify the invertebrates?

Are all circulatory systems equal?

How do you use the biological microscope?

Becoming familiar with a biological microscope

Are we all equal?

How are chromosomes divided?

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

Am I color-blind?

How does natural selection occur?

How is a gene selected in a population?

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