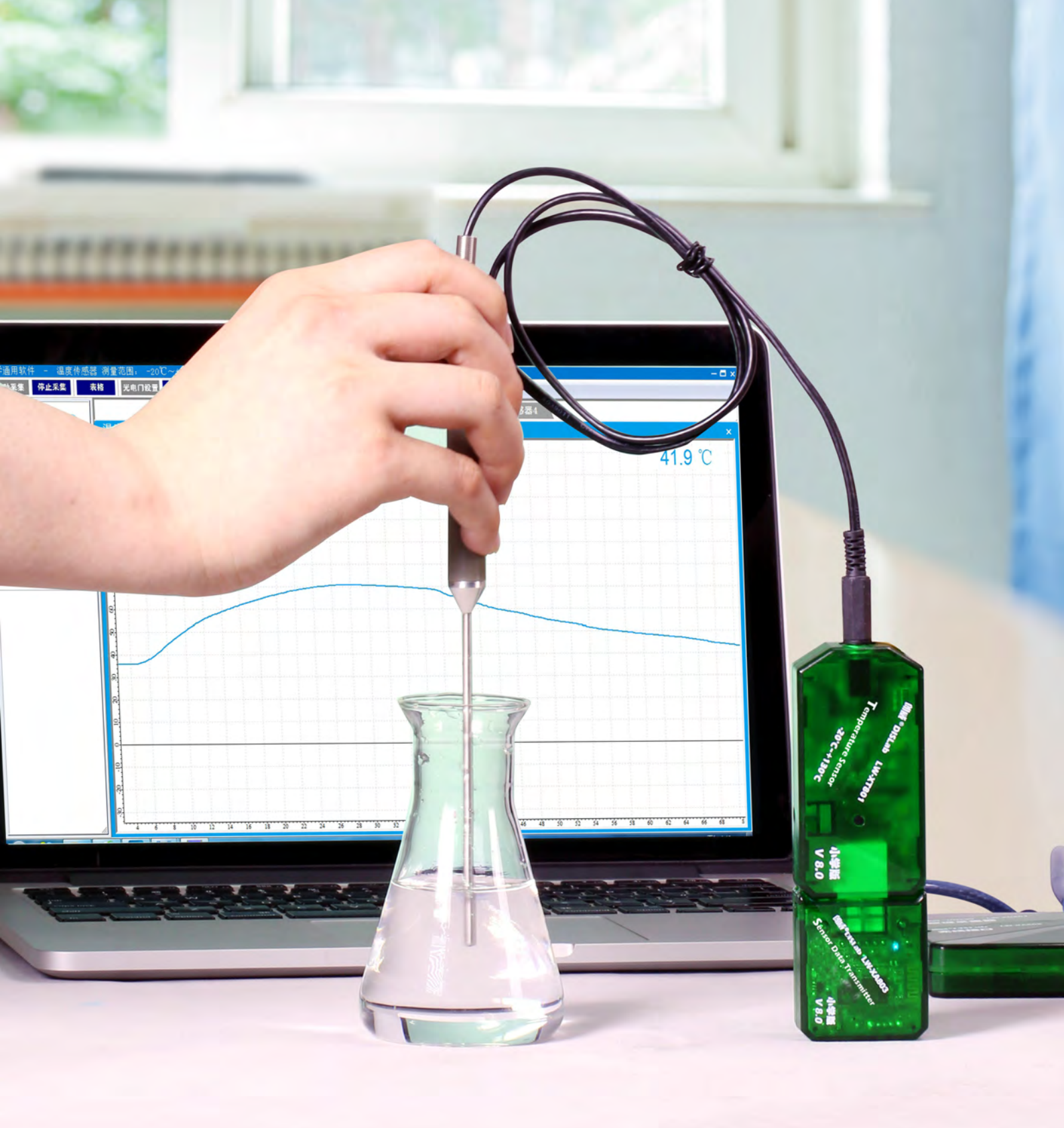


Experimental Data Acquisition System

PRIMARY SCHOOL SCIENCE INQUIRY KIT

Inquiry Tools Package for Primary School

Specially designed based on the science curriculum of primary school, including Mechanics, Heat, Sound, Optics, Electricity, Magnetic, Chemistry and Life Science I,II.

Mechanics

Including force, photogate, displacement sensors, etc.

Typical Applications:

· Whether the buoyance exerts on a sinking object
· Frictional force
· Inclined planes will reduce the force used
· Study on leverage and pulley
· Comparison of the velocity of small carts
· The secret of Simple pendulum

Experiment of simple pendulum using photogate sensor

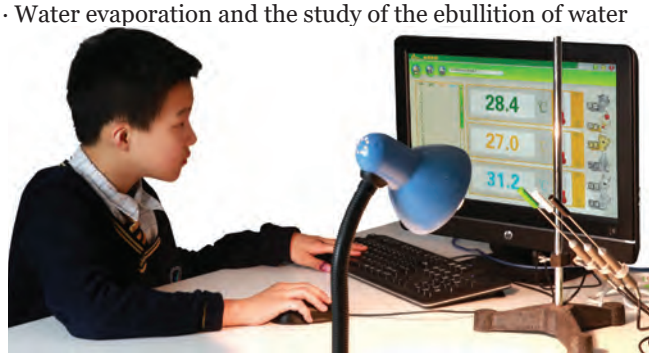
Comparison of the velocity of the small carts

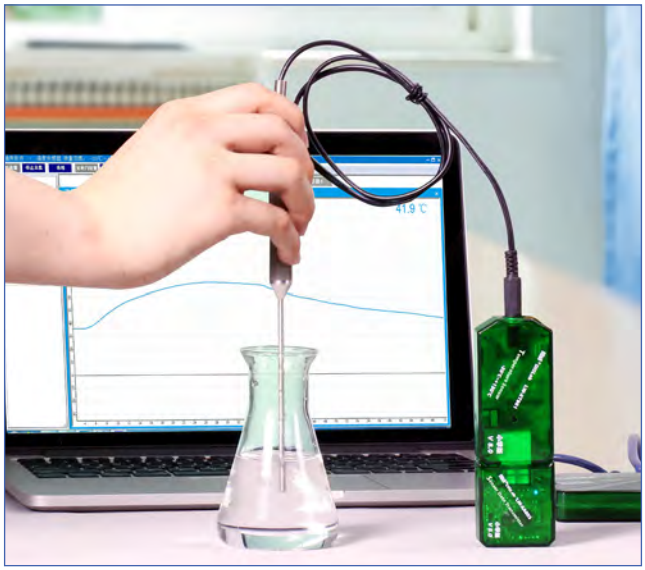
Heat

Including temperature, high-temperature, IRT, pressure sensors, etc.

Typical Applications:

· Measure the temperature change of water
· Friction generates heat
· Comparison of the thermal conductivity of different materials
· Comparison of the heat absorption capability of materials with different colors (below)
· Water evaporation and the study of the ebullition of water





Temprature change during water cooling

Sound

Including sound, sound level sensors

Typical Applications:

The three elements of sound; study on the relationship between the distance of sound source and sound intensity; the comparison of the noise during daytime and night; compare the soundproof effect of different materials.

Sound wave observation, the results as below

Light

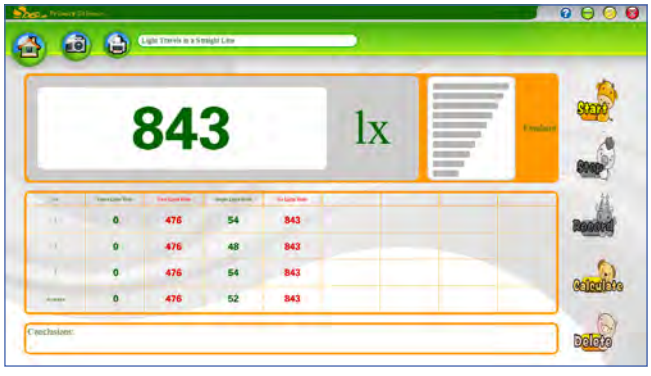
Including illumination, dual-range illumination sensors, etc.

Typical Applications:

· Light travels in a straight line
· Light reflection of objects with different colors

The role of magnifying glass

Experiment of light reflection ability of objects with different colors, the results as below



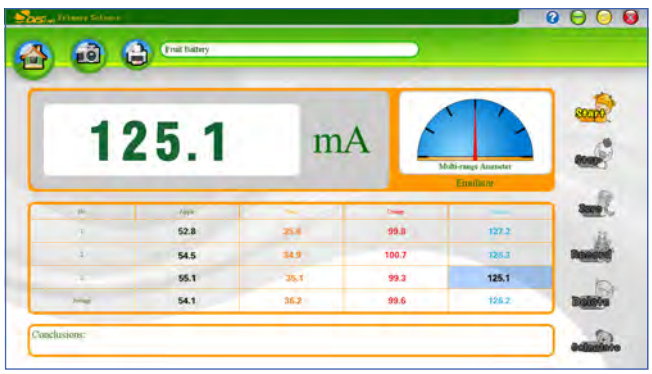
Electricity

Including current, voltage, micro current, multi-range current, multi-range voltage sensors, etc.

Typical Applications:

Study on the electronic conductivity of different materials; fruit battery; why does the light bulb glow; the function of fuse; thermoelectric power generation; study on the solar battery; the connection of simple circuit; the measurement of normal circuit; energy conversion; the comparison of new and used battery; the ubiquitous electricity; electrical conductivity of glass items; electrical conductivity of pure water; current of human body; human power generation; magical electroplating; the principle of electromotor; magnetism produced by electricity; heat produced by electricity; installation of buzzer; study on the thermal radiation; study on electrostatic, etc.

Experiment of light reflection ability of objects with different colors, the results as below



Magnetic

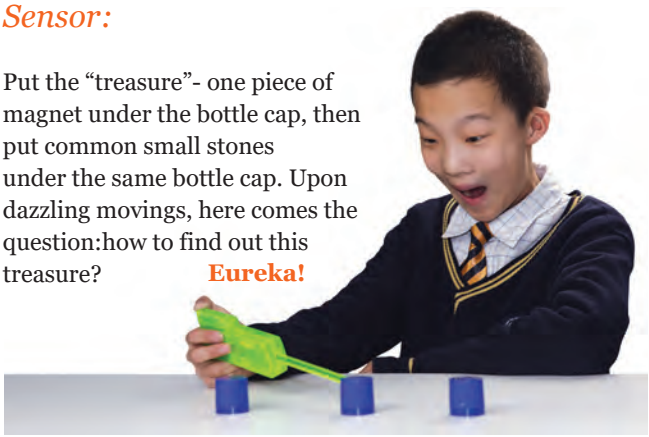
Including magnetic induction, current , voltage sensors, etc.

Typical Applications:

The magnetic intensity at different parts of a magnet; the change of magnetic force; electromagnet; electricity and magnetism; the magnetic field of earth; electricity produces magnetism and magnetism produces electricity; the magnetic line; the common of different electronic appliances; where are the magnetic items in the electronic appliances? Which is the strongest magnet? How to identify common metals and non-metals? The usage of the magnet attraction and repulsion; magnetic levitation DIY, etc.

Treasure Hunting by Magnetic Induction Sensor:

Put the “treasure”- one piece of magnet under the bottle cap, then put common small stones under the same bottle cap. Upon dazzling movings, here comes the question:how to find out this treasure? **Eureka!**



Life Science I

Including temperature , pH, conductivity , chroma , turbidity , relative humidity, pressure sensors, etc.

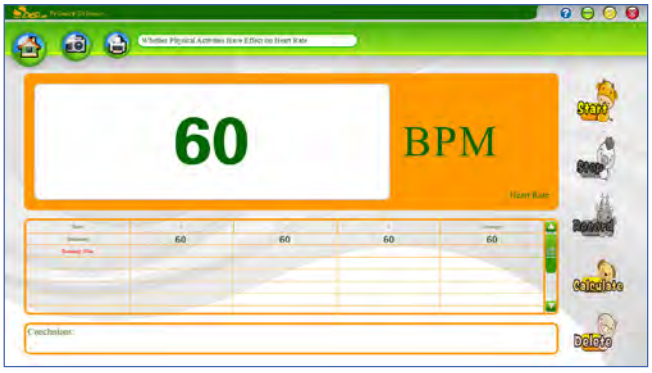
Life Science II

Including temperature, pH, conductivity, chroma, turbidity, relative humidity, pressure sensors, etc.

Typical Applications:

· The composition of the air
· Compare the air content and the exhaled gas content

To measure the heart rate using sensor



Measuring results of heart rate

Chemistry

Including pH, conductivity, high-temperature, chroma, turbidity, O_2 and CO_2 sensors, etc.

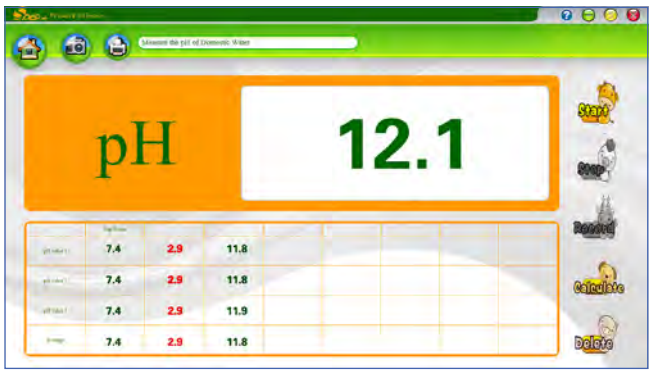
Typical Applications:

· Research of drinking water
· Observe the change of the milk
· The change of candle burning

Extensive Applications:

· Measure various kinds of bottled water
· Salinity measurement between different water sources
· Compare the pH values of juice and milk
· The water suitable for fish

Learn to use pH sensor



Measuring results of pH value of bottled soda water