



EXHIBIT CATALOGUE

Scientific principles in action

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3-D Mirascope



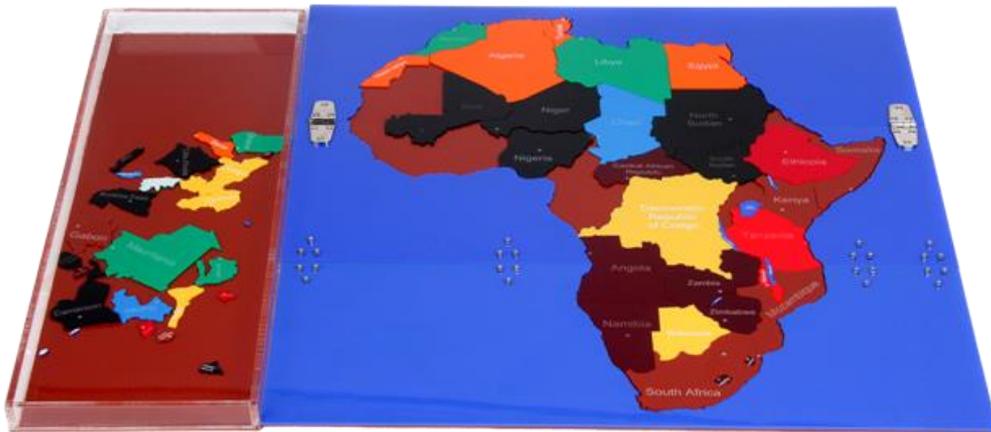
A 3-D Mirascope creates a hologram image that looks 100% real, but you can't touch it. The object seems to be there, but when you try to touch it, your fingers go right through it. The frog is placed in the centre of the concave mirror which then causes the object to be instantly projected up to the viewing circle. The frog can be seen from any angle and appear to be floating in mid air.



Africa Map Puzzle



This puzzle familiarise learners with the geographical outlay of Africa. Every piece of the puzzle is a different colour and represents a country in Africa. When the puzzle is completed correctly a map of Africa has been created.



Alternative Energy – Sun, Grid & Wind



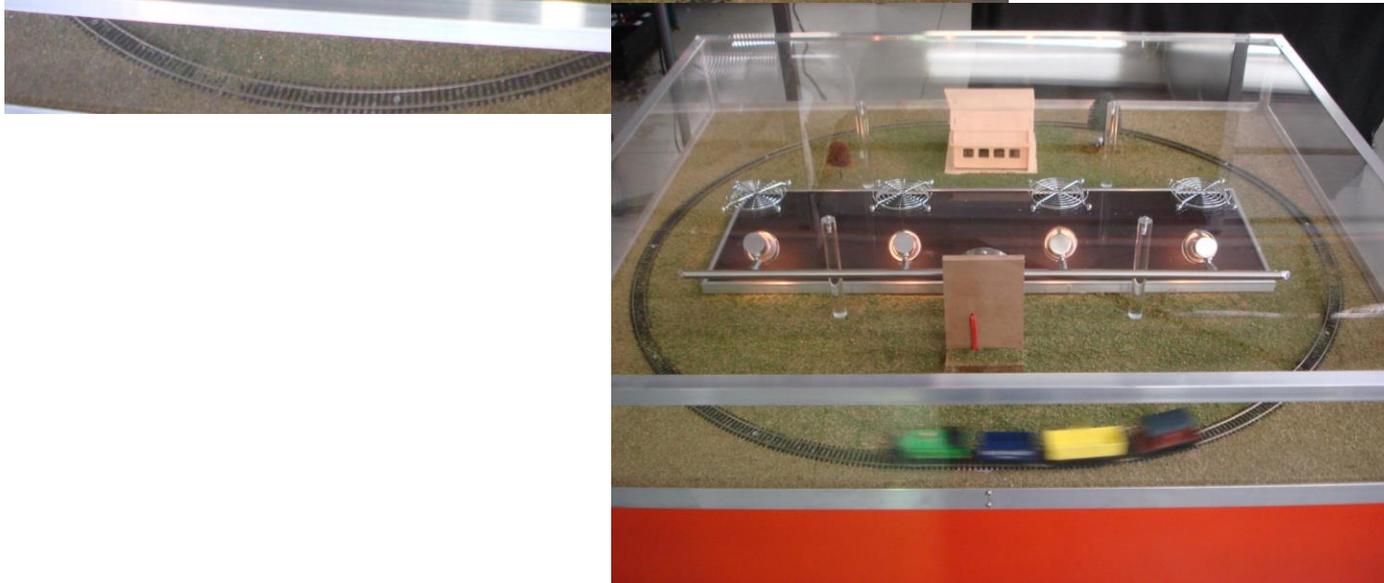
The purpose of the Wind Solar Grid exhibit is to demonstrate that multiple sources of energy can be used to supply power to a community, illustrate some of the benefits of renewable energy sources, show how power is distributed through a community from multiple sources of energy and the effect of overloading the power sources.



Alternative Energy Solar System - Train



Energy is generated from lamps (representing the sun) through a solar panel in order to make the train move, to illustrate an alternative energy source.



Ani-Africa



Learn more fun facts about 40 different animals found in Africa.

Animal Cell



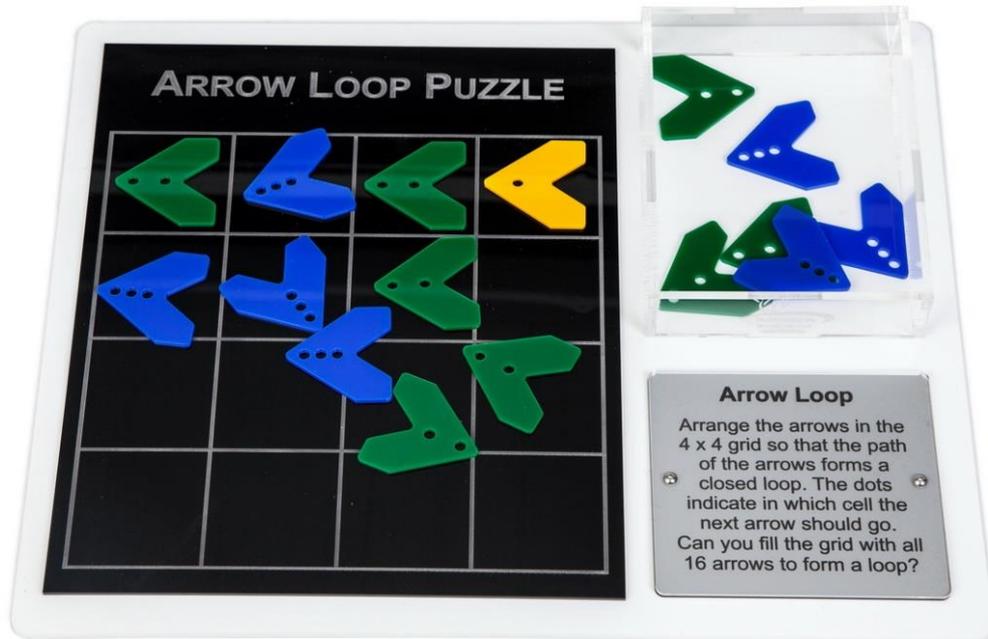
Shows the delicate structure of an animal cell approximately 2000 times life size.

Archimedes' Screw



Archimedes' Screw consists of a helix (or screw) inside a cylinder with both ends open. This helical surface surrounds a central cylindrical shaft inside a hollow pipe. The lower end of the pipe is placed under the surface of water at a slant. As the handle that is attached to the helix is turned small amounts of water slowly raises in the wells which is formed by the side of the cylinder and the surfaces of the helix. This water will slide up in the spiral tube until it finally pours out at the top of the tube. This screw was used mostly for draining water out of mines or other areas of low lying water.

Arrow Loop Puzzle



Arrange the arrows in the 4x4 grid so that the path of the arrows forms a closed loop. The dots indicate in which cell the next arrow must go.

Automotive Ignition



Electricity is converted to high voltage by a coil, sent to a distributor and in turn delivering the spark to ignite the air/fuel mixture in an automobile. This exhibit illustrates the actual spark timing, via the transparent distributor cap and the spark plugs.

Bended Mirror (Convex/Concave)



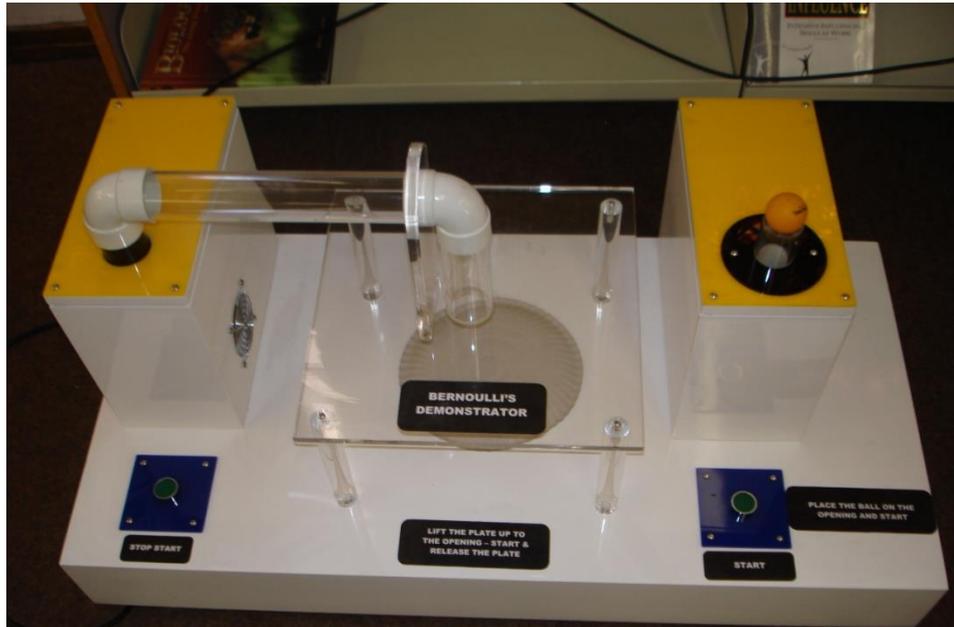
A distorted mirror creating unusual reflections.

Bernoulli's Blower

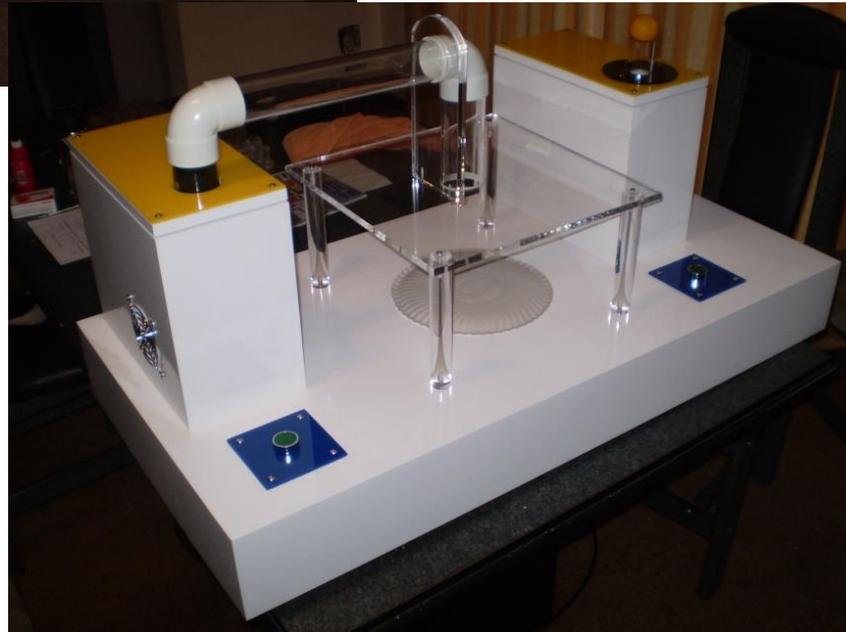


Demonstrates the lift force of air.

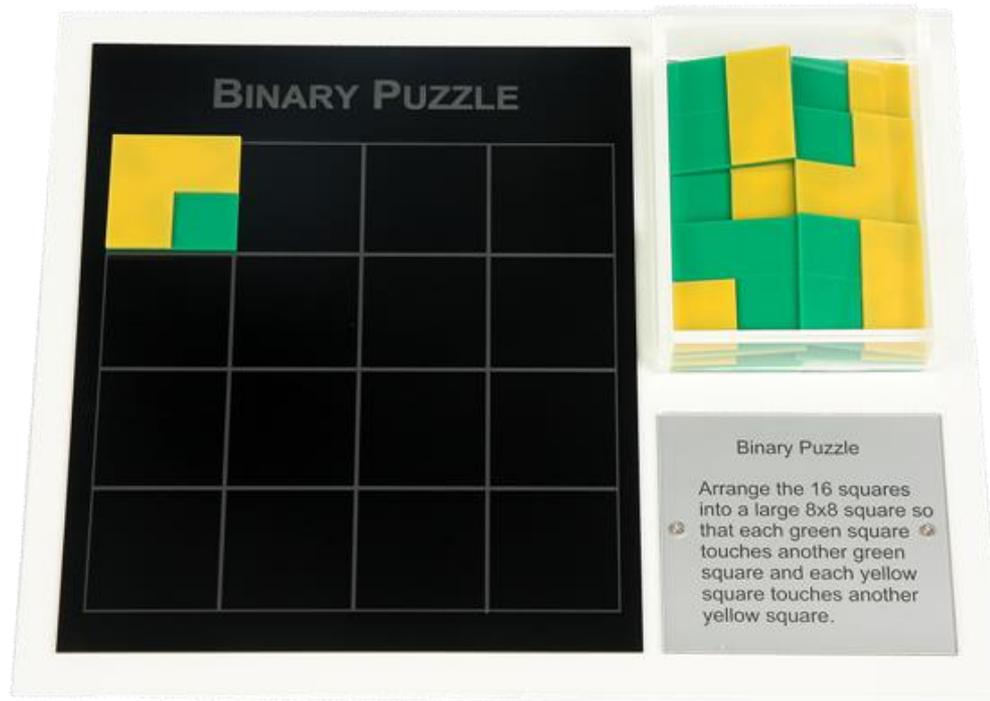
Bernoulli's Demonstrator



Demonstrates the lift force of air.



Binary Puzzle



Arrange the 16 squares into a large 8x8 square so that each green square touches another green square and each yellow square touches another yellow square.

Bite Force of a Crocodile

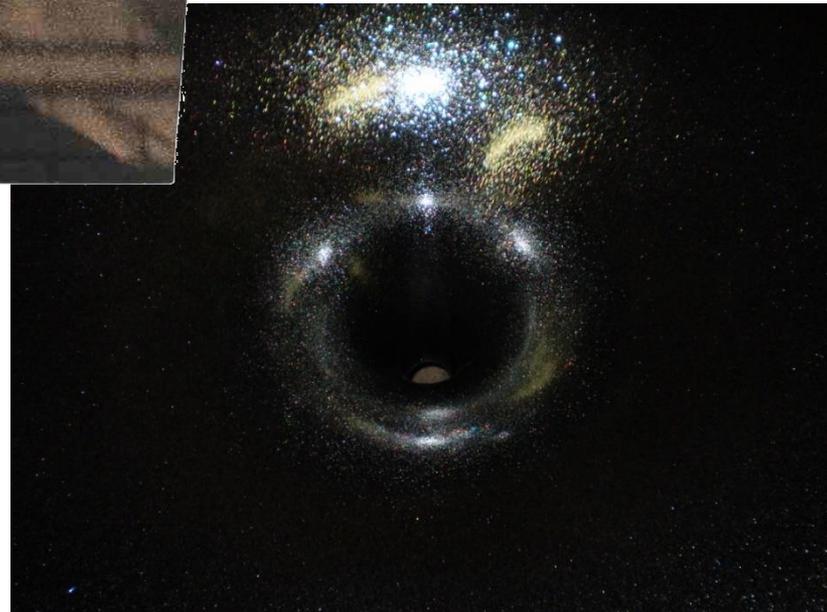


Demonstrates the bite force of a crocodile's jaw versus Humans and other animals.

Black Hole



A black hole is a place in space where gravity pulls so much that even light cannot get out. The gravity is so strong because matter has been squeezed into a tiny space. This can happen when a star is dying.



Buggy Ball



Officially “Bucky Balls” are referred to as Fullerenes or the C₆₀ molecule. This molecule consists of 60 carbon atoms, arranged as 12 pentagons and 20 hexagons the same shape as a soccer ball. This makes C₆₀ the most symmetric molecule. The NZG display is a play frame in the shape of C₆₀ molecule. Information boards will inform children or parents about the significance of the design. The Discovery Center Museum in Rockford, Illinois, USA, shows the interactive display

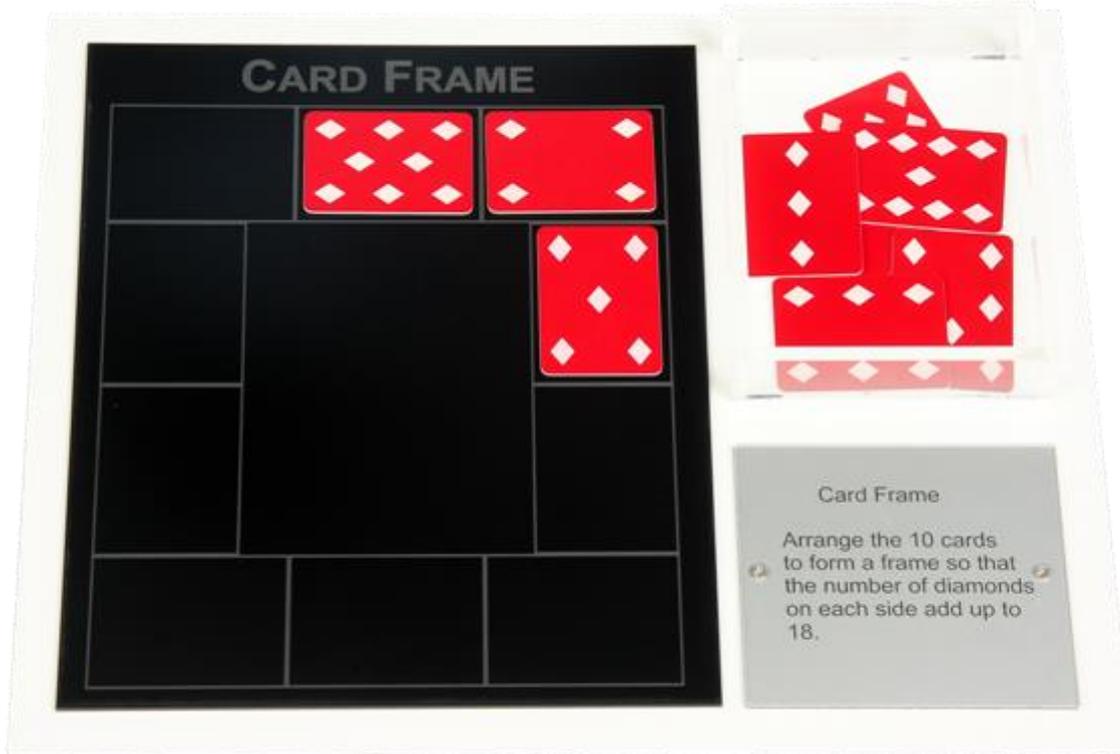
Cam and Follower



A special type of roller designed to follow a cam. The cam shaft in an automobile is used to open and close inlet and exhaust valves.



Card Frame



Arrange the 10 cards to form a frame so that the number of diamonds on each side add up to 18.

Chain and Gear



Illustrates how a small gear turns the large gear by being linked by a chain. The smaller gear turns at a faster rate than the large gear and completes more revolutions. Demonstrates gear ratios.

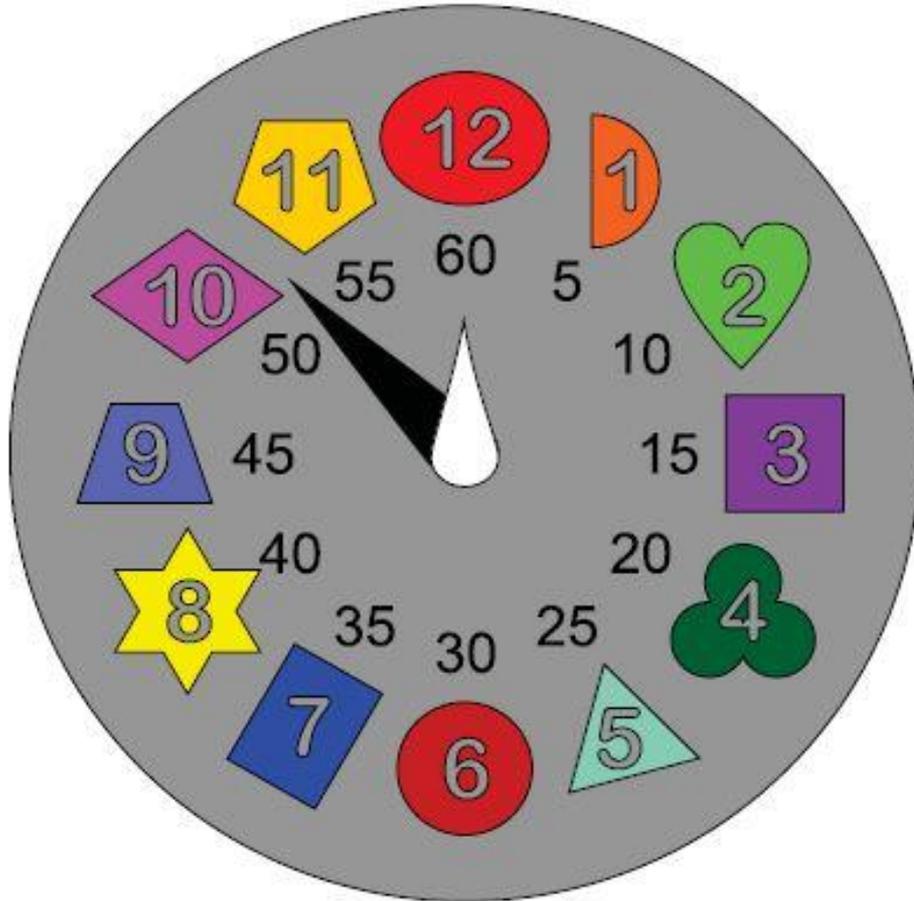


Chairs of Nails



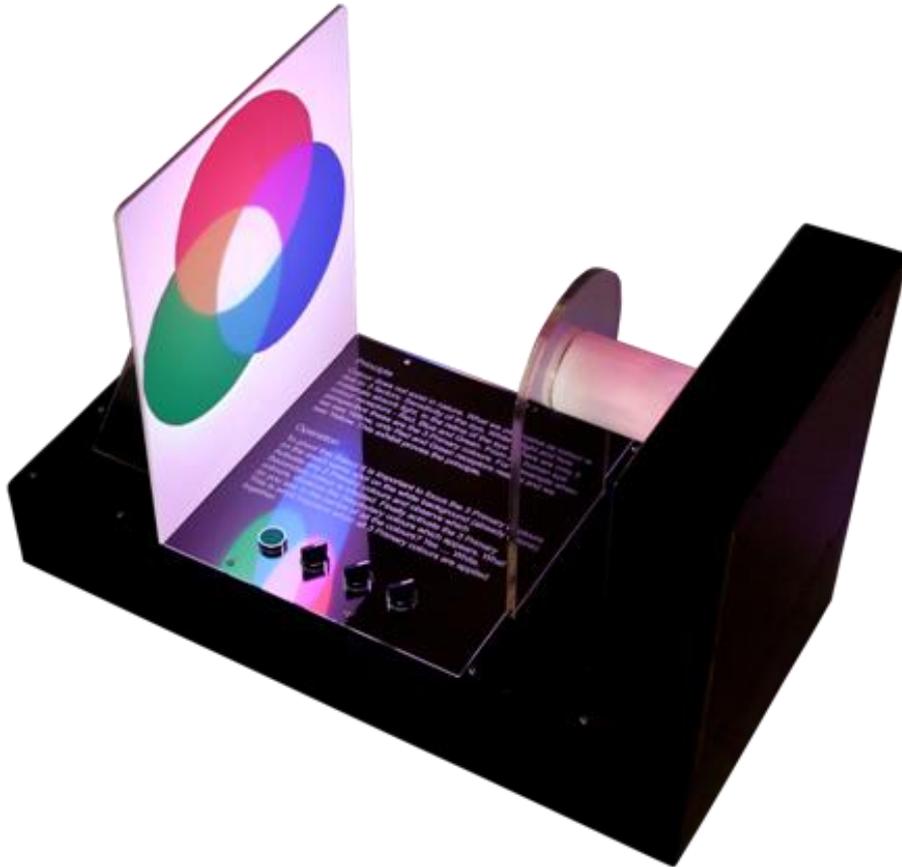
This exhibit demonstrates how pressure is distributed by surfaces covered by different objects including nails, balls and pegs.

Clock Puzzle



Each number on this clock is in a different shape. Building this puzzle helps with shape recognition and shows where the numbers are positioned on a clock.

Colour Demonstrator



This exhibit uses four different coloured light sources, namely red, blue, green and yellow. Red, blue and yellow are three primary colours. When the four colours in this exhibit are mixed together by aiming them at the same spot on the white surface, they create different secondary colours.

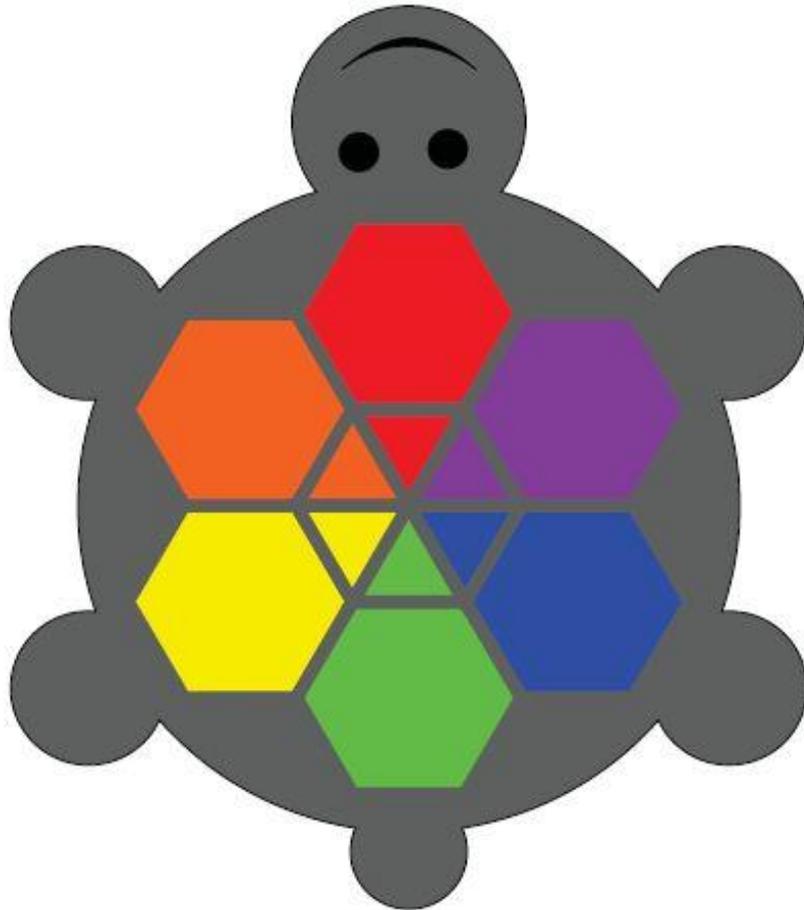
Colourful Beings



Shows the importance and reasons for different colours in nature.

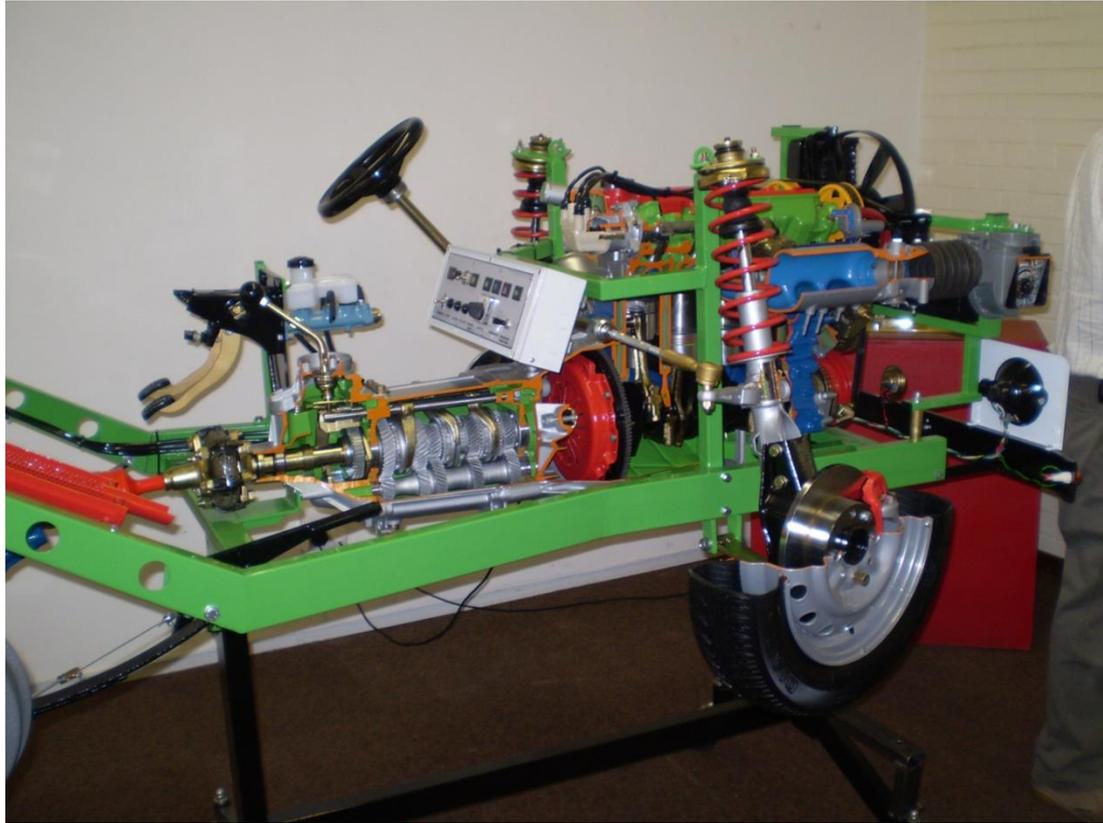


Colour Matching Tortoise



The triangles in the middle are fixed, the hexagons are loose and have to be placed next to the matching triangle. An additional hexagon is provided to cover the centre; the tortoise can then be used like a memory game.

Complete Car Cut-Away



Interactive exhibit which illustrates how a car works and what it looks like when cutting away the external shell.

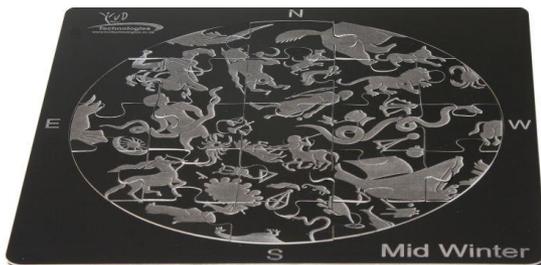
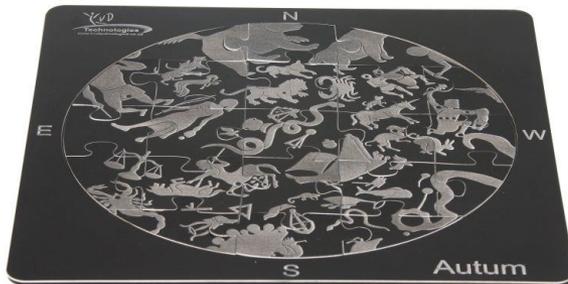
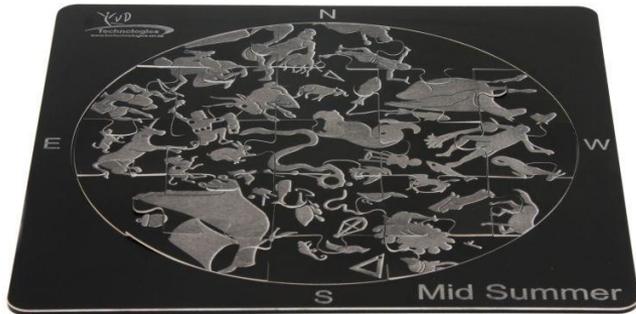
Complete Power Demonstrator



Demonstrates the process of generating power, load balancing and the effects power demand by displaying numerical values.

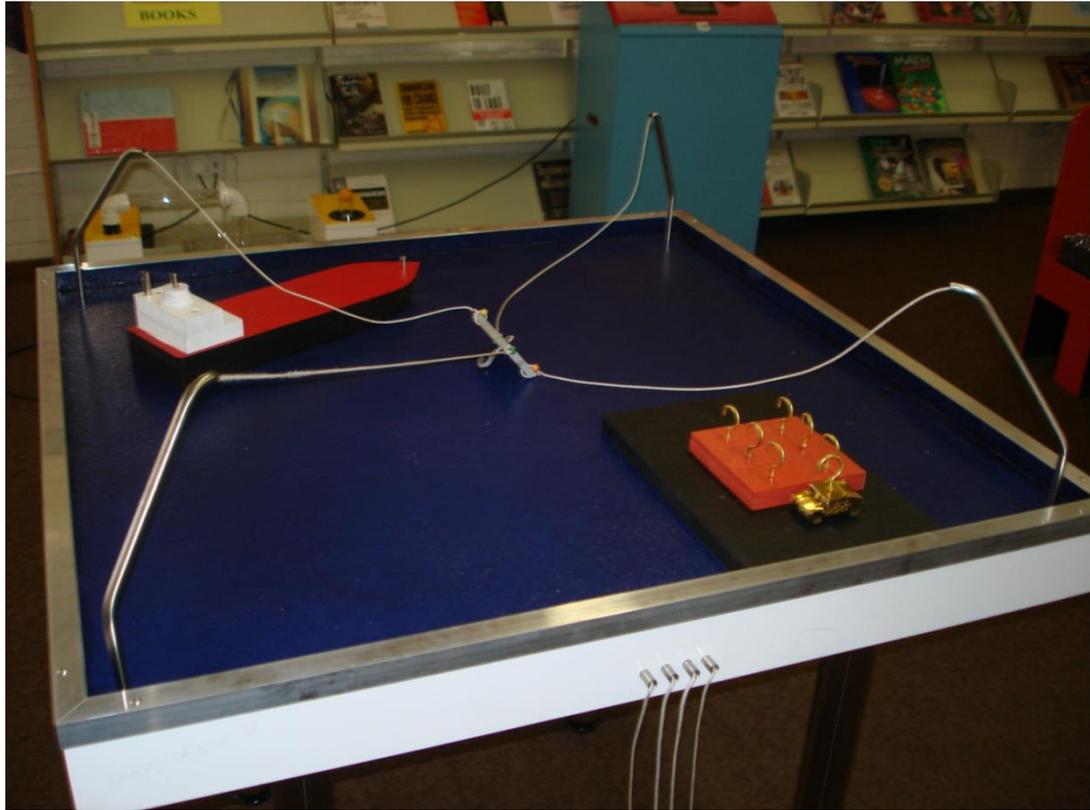


Constellations Puzzle



These Constellations Puzzles show the different constellations, visible in each season, from the Southern Hemisphere.

Crazy Cranes



The objective is to simultaneously control the cranes to lift blocks onto the ship.

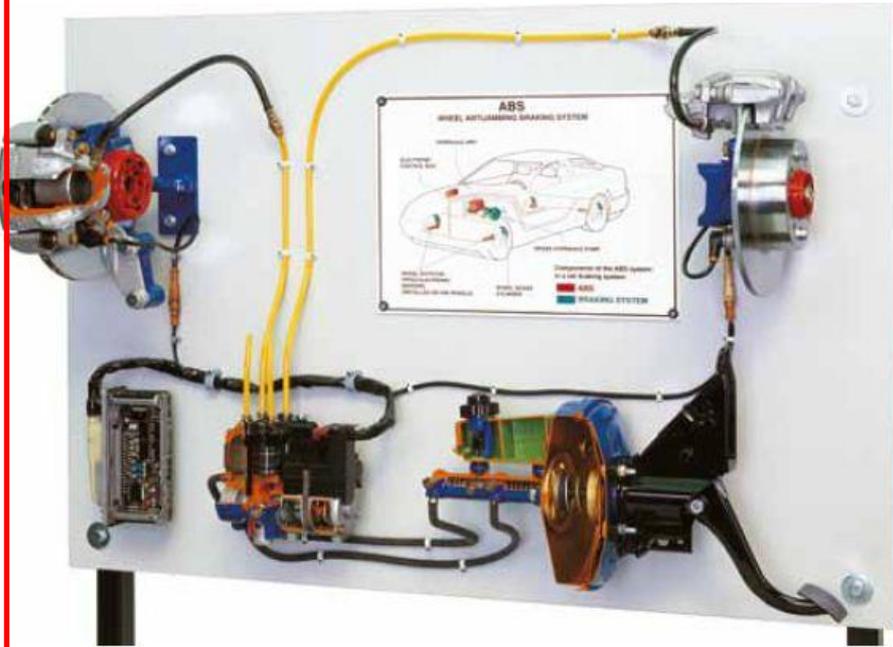
Crazy Magnets



Illustrates the principle of magnetism — opposites attract and similar repels.



Cut-Away Brake



Educational model of a modern ABS braking system for motorcars. All the brake parts are provided as detailed cutaway models, connected together to enable easy understanding of the brake assembly operation. The assembly consist of:

- Self-ventilating disc brake with phonic wheel and sensor
- Rear disc brake with phonic wheel and sensor
- Servo brake with foot control panel and brake pump
- Electronic control unit
- Oil tank

Cut-Away Car



Model of a Petrol engine chassis

4-wheel drive with multi-point electronic injection.

Cut-Away Engine



This cut-away model is carefully sectioned for training purposes on an engine unit with overhead camshaft and toothed timing belt.

Cut-Away Gearbox

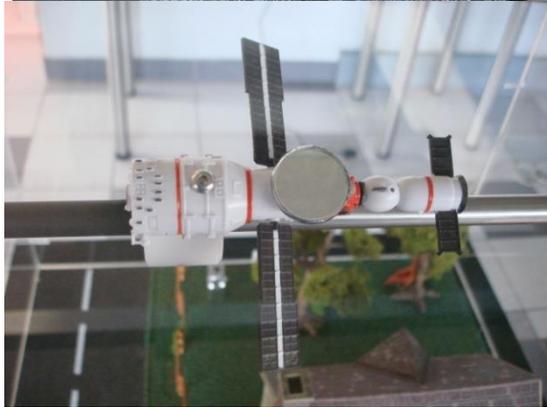


This cut-away model is carefully sectioned for training purposes on a gearbox with clutch, 5 forward speeds and reverse.

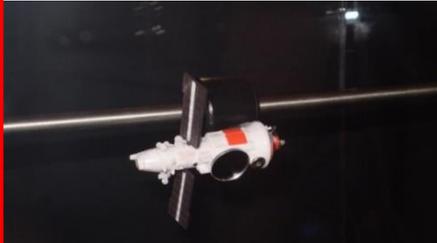
Dish from Satellite - DSTV



Demonstrates the principle of satellite television.

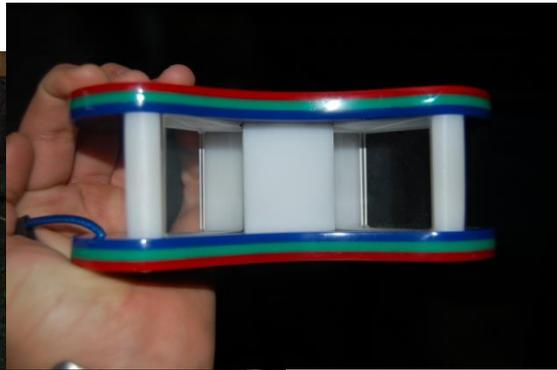
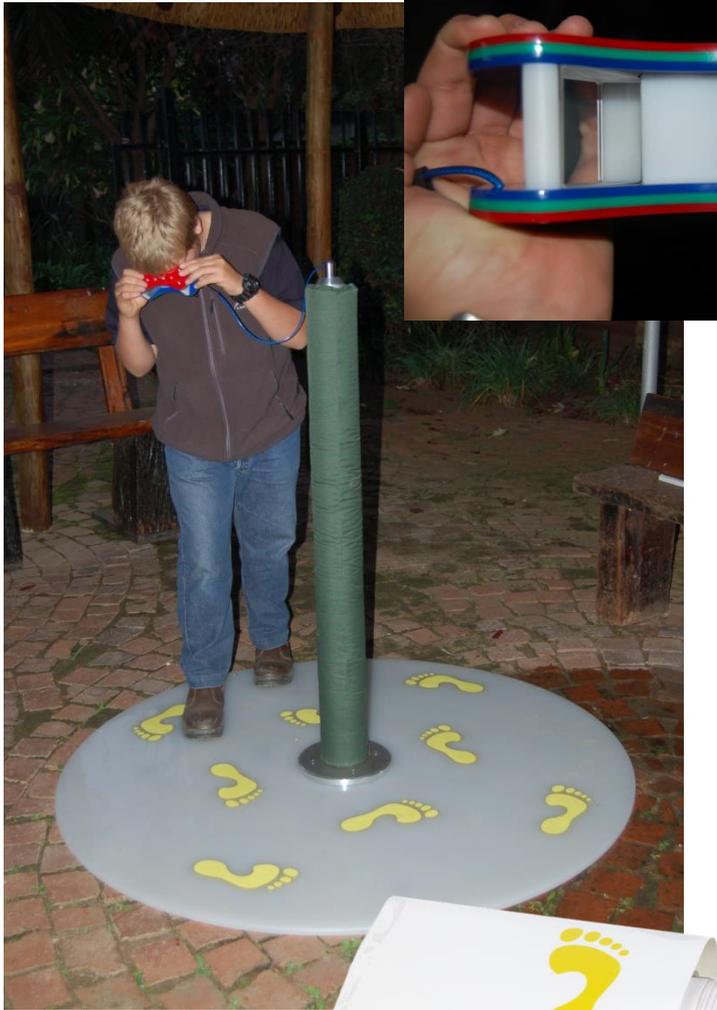


Dish from Satellite



Demonstrates how a satellite is used to relay information between two earth-bound base stations.

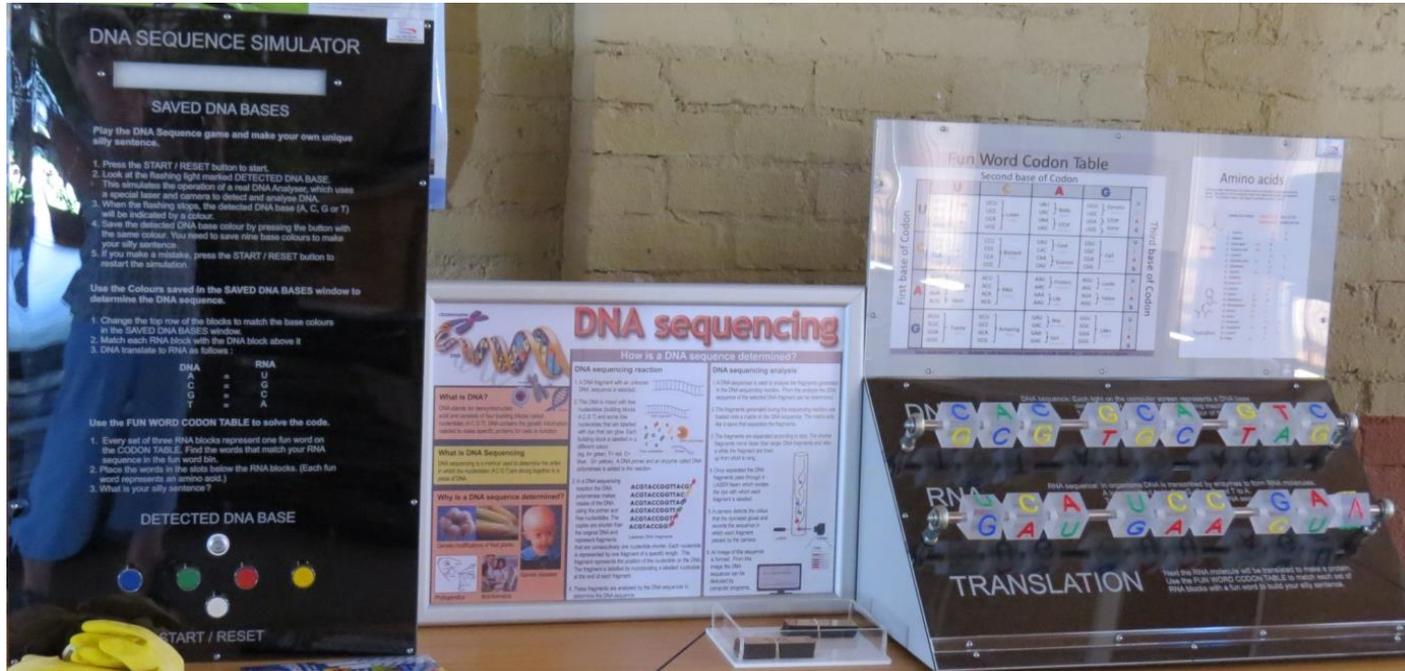
Dizzy Viewer



While looking through the reflector, left becomes right. The objective is to try to walk by placing your footsteps on the feet marks of the exhibit.

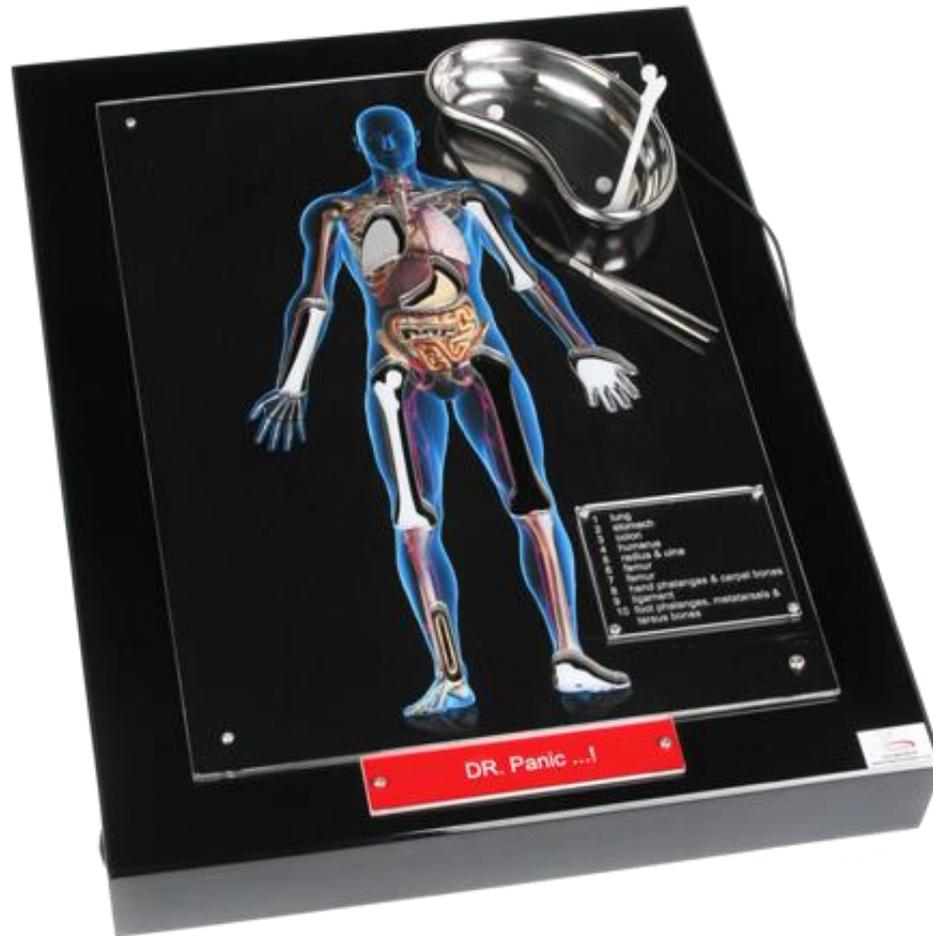


DNA Sequencer Simulator



An interactive and informative exhibit about DNA sequencing aimed at introducing learners and students to basic concepts related to Bio-technology. The instrument is the foundation about DNA sequencing and the applications thereof. Flashing coloured LED lights is used to demonstrate detection of fluorescently labelled nucleotides during DNA sequencing. The exhibit explains nucleotide sequencing and the genetic code, amino acids, genes, mutations and such topics covered in FET-life science curriculum with a hands-on interactive *Translation Game*.

Dr Panic



Dual Digital Microscope



The Dual Digital Microscope consists of 2 Microscopes, a turn-wheel with 12 replaceable slides, a TV monitor and two posters.

The first microscope focuses on the slides. By turning the turn-wheel underneath this microscope you can see an enlarged view of each slide on the TV monitor. The first poster will teach you more about the contents of the slides.

The second microscope is to have a look at your own fingerprint. Place your finger under this microscope and you can see your enlarged fingerprint on the monitor. The second poster will teach you more about the 3 different classifications of fingerprints and how fingerprint classifications works. Now you can classify your own fingerprint

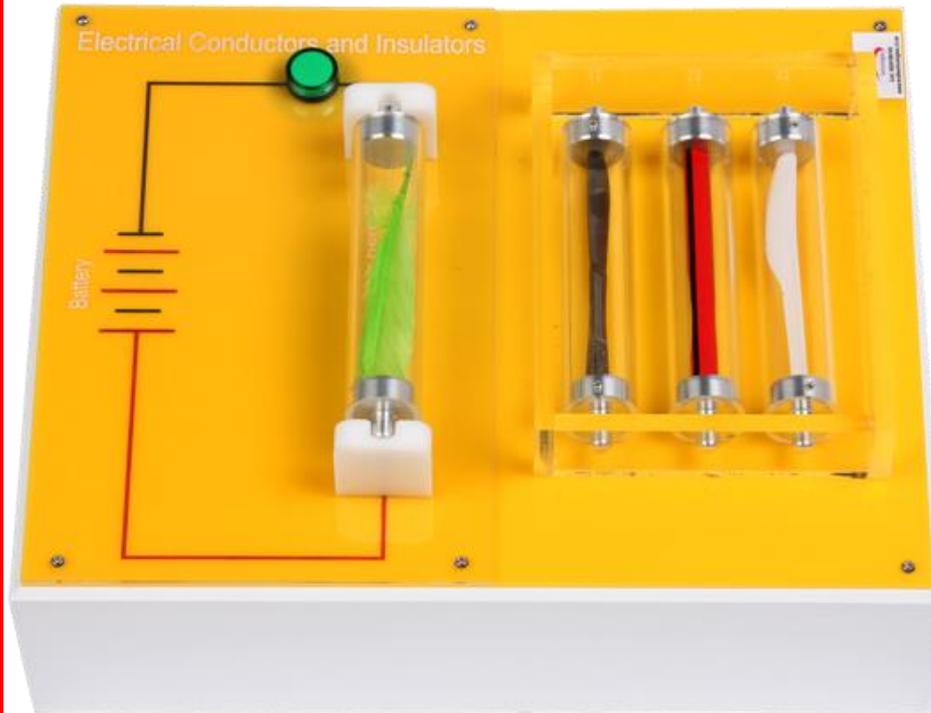
Ecological Pyramid



We, the humans, are at the top of the pyramid.

Our existence depends on all the producers and consumers below us. We have to look after them, but most importantly we have to look after the resources; if only one resource is damaged (polluted) the whole pyramid will collapse.

Electrical Conductors & Insulators



An electrical circuit is constructed containing a battery and a LED light. The circuit is incomplete and needs to be “closed” to conduct electricity and switch on the LED light. To close the circuit and ensure a flow of electricity you are supplied with four acrylic tubes. Each tube contains an item or a material which can either be an insulator or a conductor of electricity.

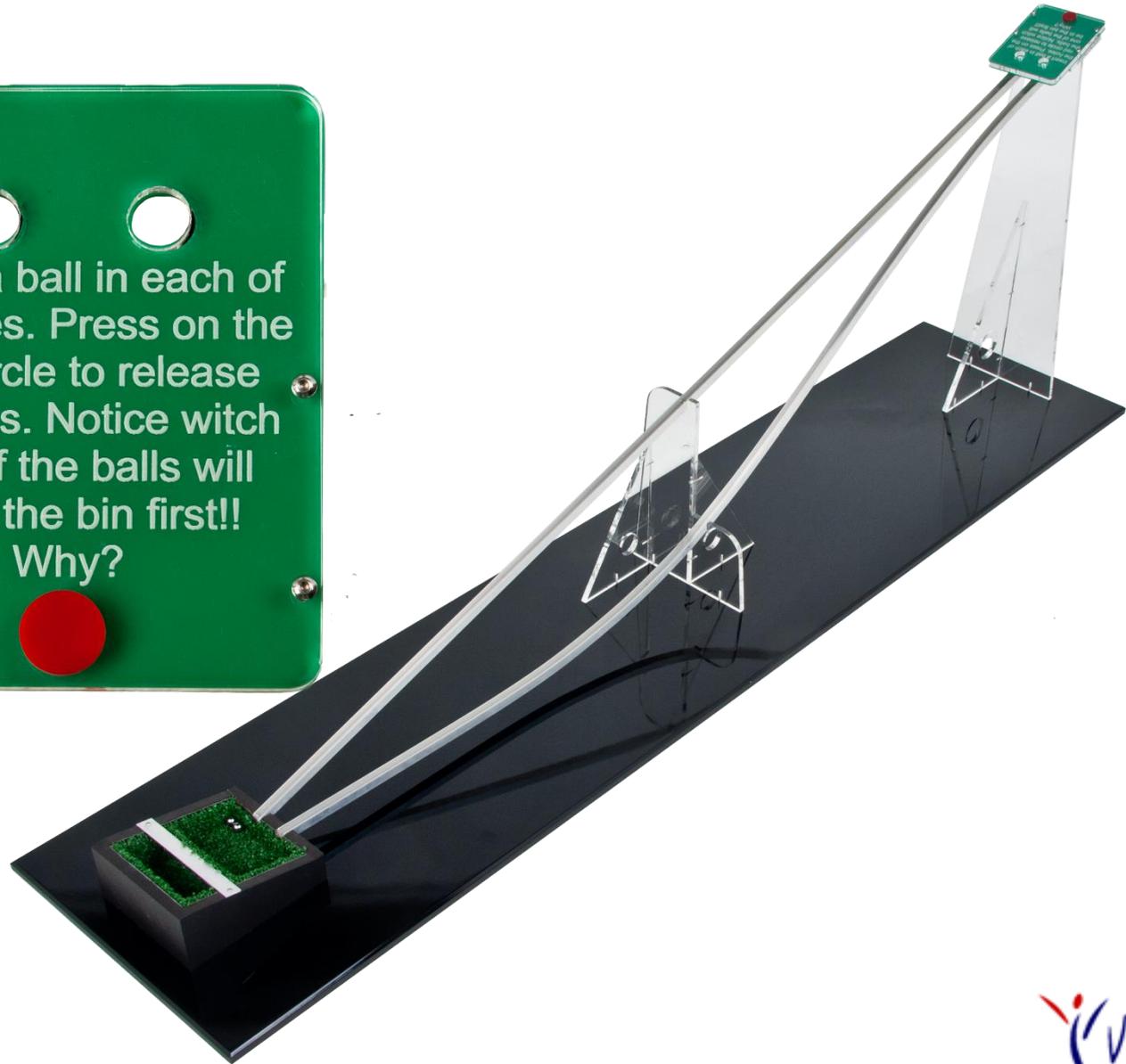


Electro Magnets with Rotating Fields



By rotating the electro magnet the compasses change direction to indicate the direction of the magnetic field.

Energy Roller Coaster



Energy Saving Demonstrator



Incandescent lamps on the left consumes more electric energy than the light emitting diodes (LEDs) counterpart on the right as illustrated by the meters.



Fiber Optic Data Transmission



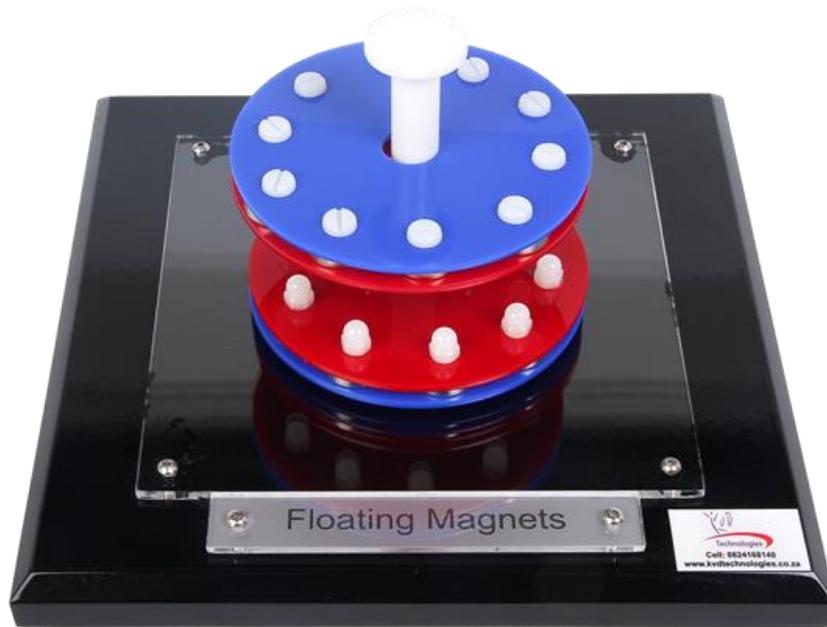
By the press of a button data is transferred from one point to another via fiber optic cable. The modulated laser is visible in a spot where the sheath has been removed. The laser modulation can clearly be seen in the lower enlarged simulation of the fiber optic principle.

Five Pieces, Six Shapes



Use the five pieces to build either a triangle, or a square or a cross. Can you also build a rectangle, a trapezium and a parallelogram?

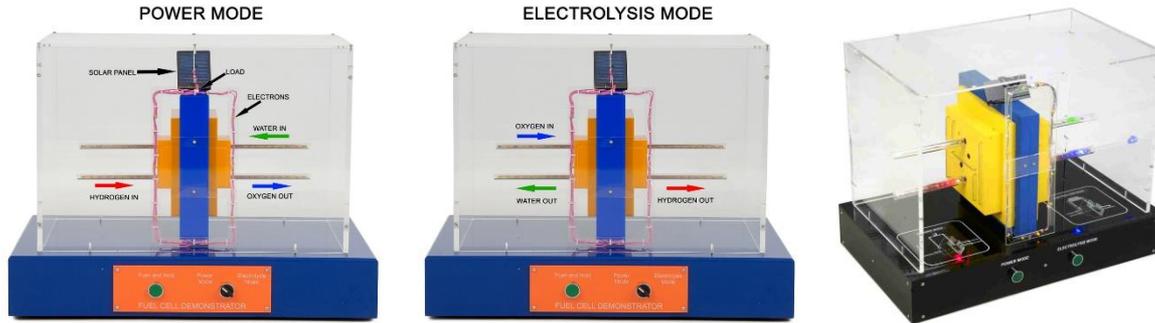
Floating Magnets



Illustrates the principle of magnetism where devices with similar polarity repels each other resulting in the upper disk “floating”.

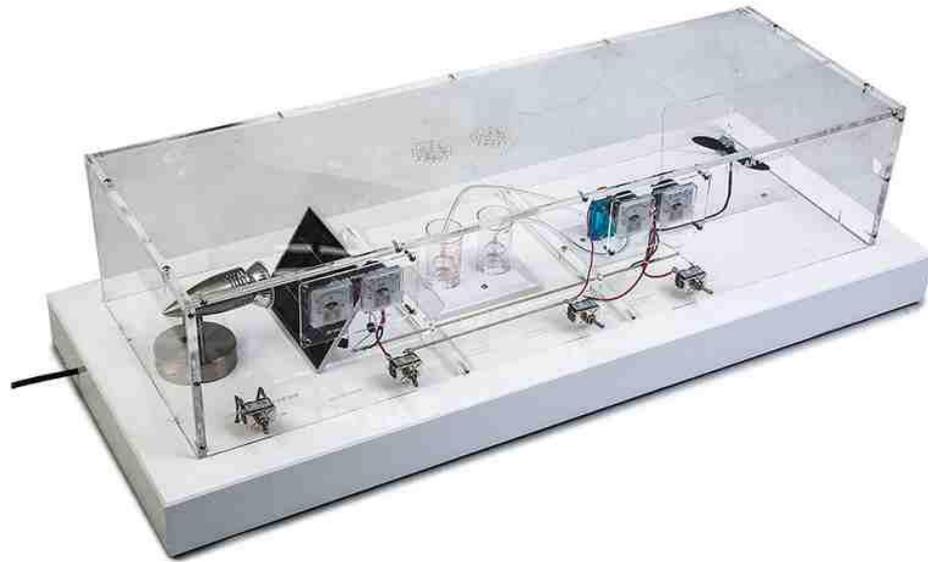


Fuel Cell Demonstrator (Mock-up)



A fuel cell is a device that generates electricity by a chemical reaction. Every fuel cell has two electrodes, one positive and one negative, called, respectively, the anode and cathode. The reactions that produce electricity take place at the electrodes. Every fuel cell also has an electrolyte, which carries electrically charged particles from one electrode to the other, and a catalyst, which speeds the reactions at the electrodes. Hydrogen is the basic fuel, but fuel cells also require oxygen. One great appeal of fuel cells is that they generate electricity with very little pollution—much of the hydrogen and oxygen used in generating electricity ultimately combines to form a harmless byproduct, namely water. One detail of terminology: a single fuel cell generates a tiny amount of direct current (DC) electricity. In practice, many fuel cells are usually assembled into a stack. Cell or stack, the principles are the same

Fuel Cell - Real



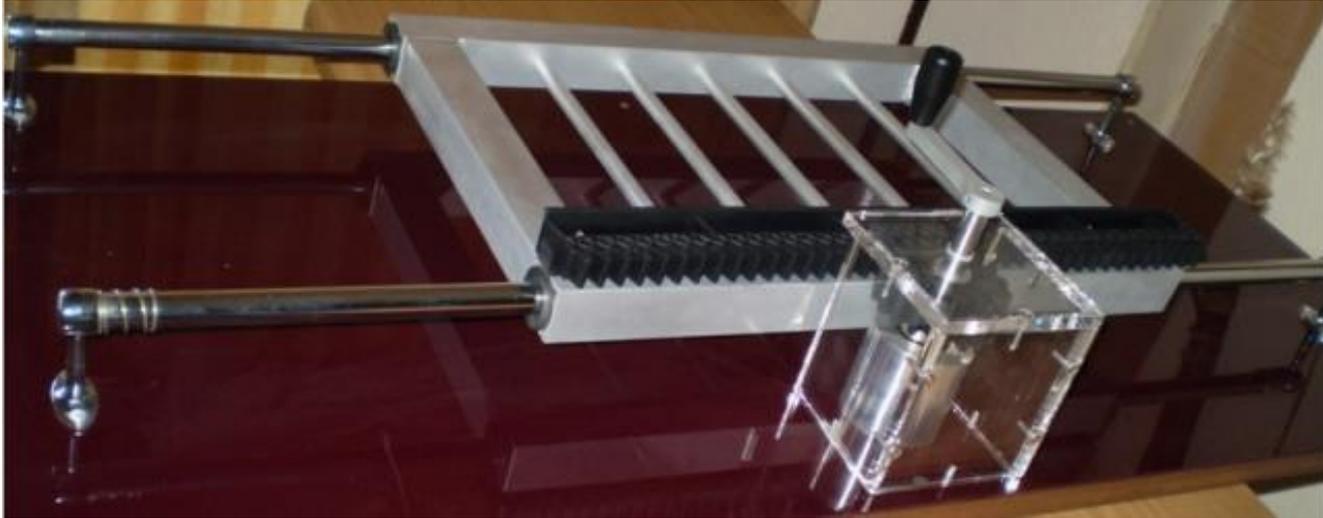
The exhibit shows the principle of proton exchange in the membrane (PEM) fuel cell and PEM electrolyser. Measurements can be taken. Therefore the exhibit has 2 PEM cells, one serving as the electrolyser and the other as the fuel cell. When DC voltage is applied to the electrolyser it splits the distilled water into hydrogen and oxygen. During this process hydrogen forms on the cathode (negative) side of the membrane and oxygen on the anode (positive) side.

Galileo's Pendulum



A pendulum is a weight suspended from a pivot so that it can swing freely. When a pendulum is moved sideways from its equilibrium position, it is subject to a restoring force due to gravity that will accelerate it back towards equilibrium position. When released, the restoring force combined with the pendulum's mass causes it to oscillate about the equilibrium position, swinging back and forth. The time for one complete cycle, a left swing and a right swing, is called the period. A pendulum swings with a specific period which depends (mainly) on its length.

Gate Opener



Demonstrates the mechanics of a palisade gate opener.

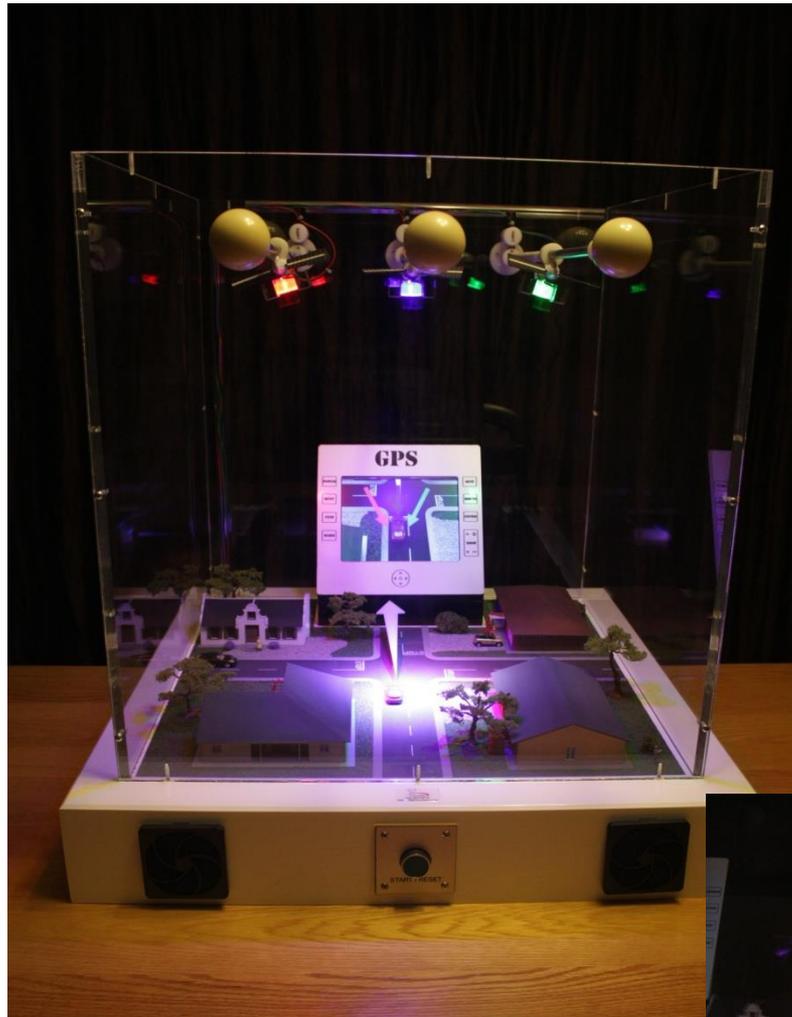
Generate for Colour



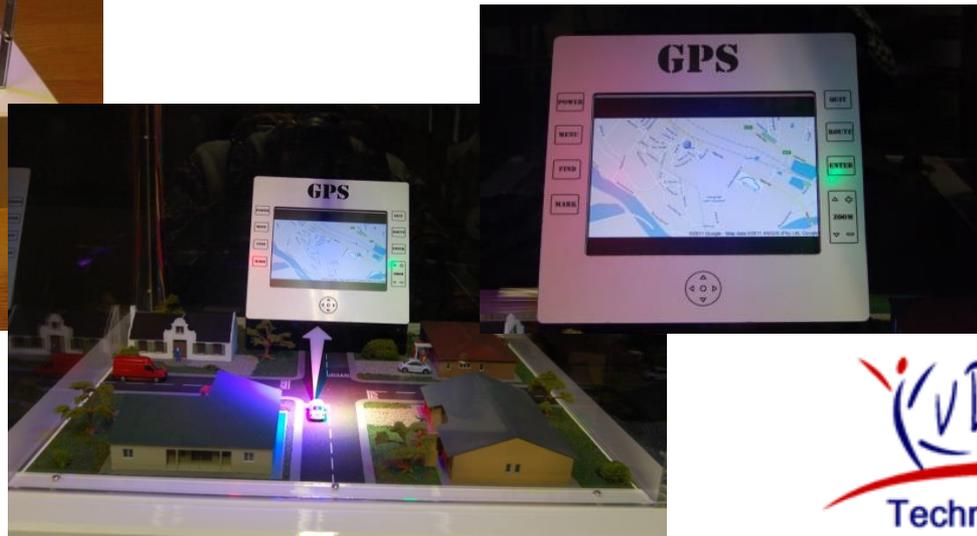
By turning the handle, electricity gets generated which powers up colourful lights, demonstrating that moving a magnet relative to a coil generates electricity.



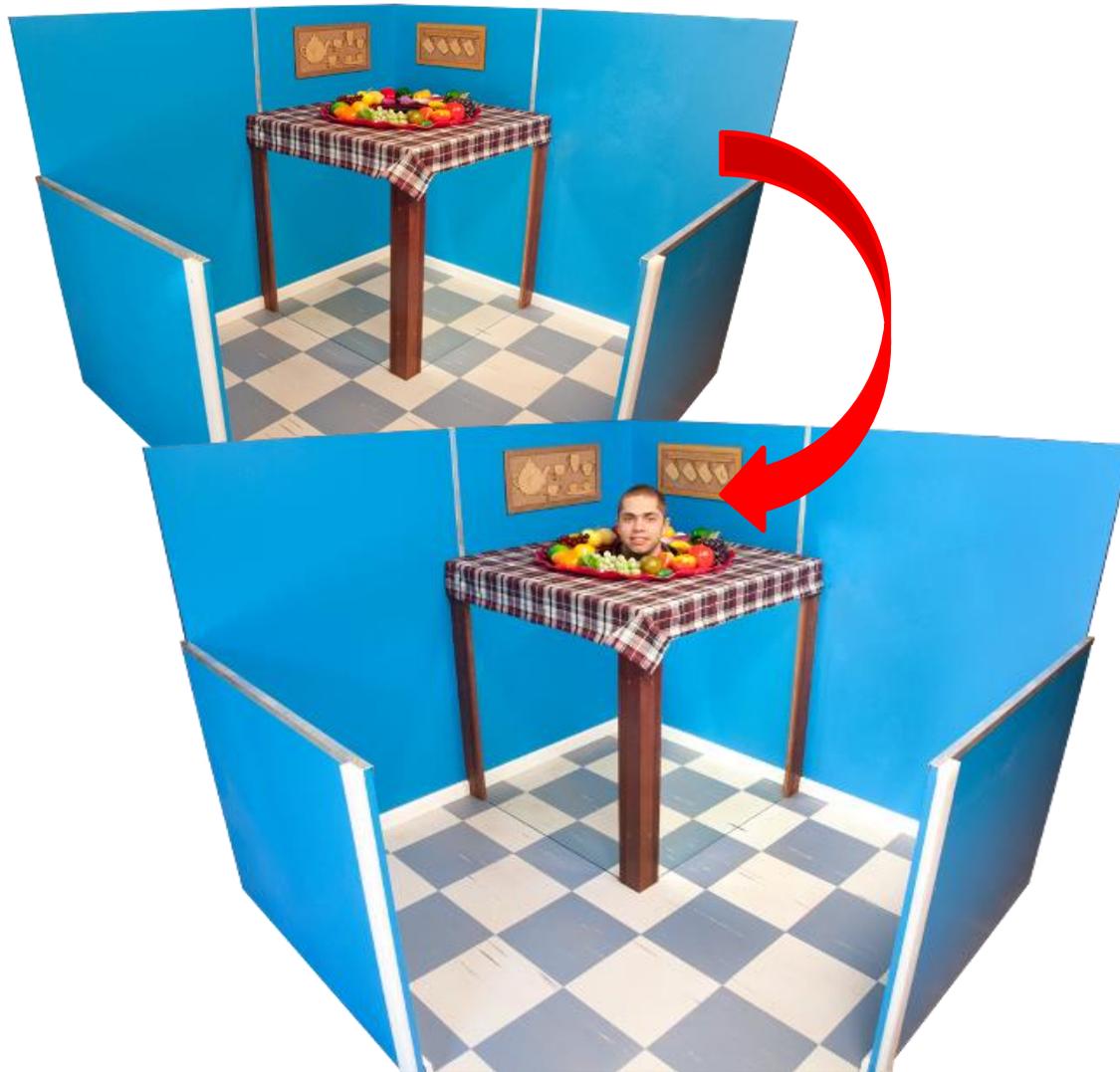
GPS Demonstrator



By centering the 3 colour coded satellite footprints on the car this exhibit demonstrates how 3 GPS satellites are used to triangulate coordinates on earth.

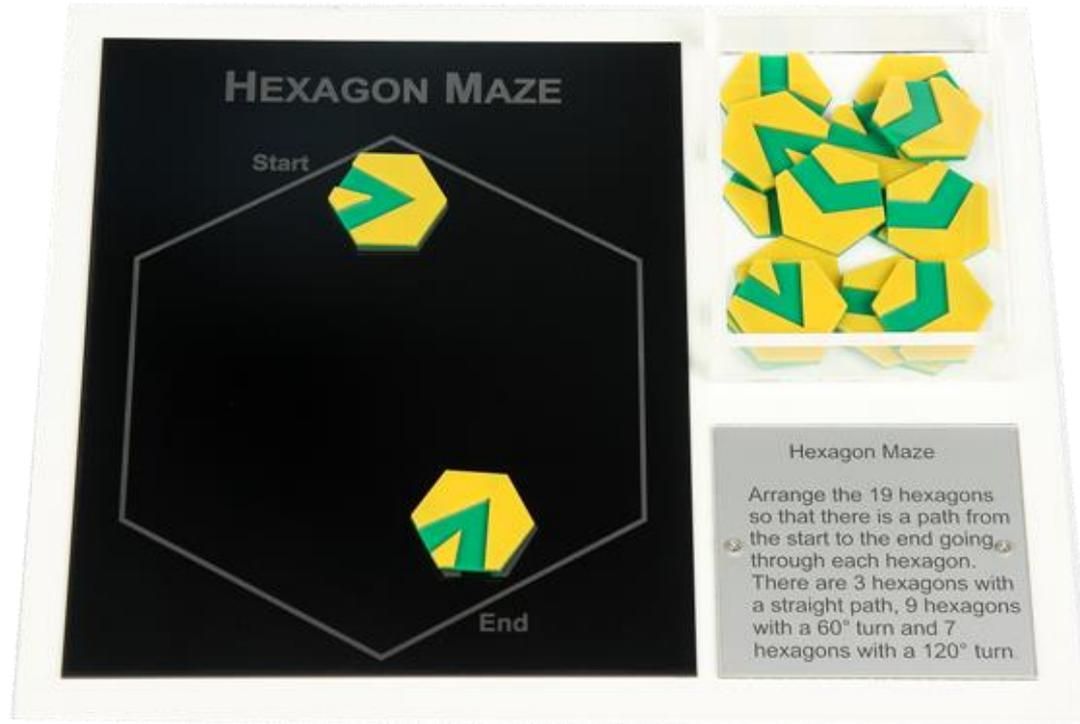


Head on a Plate



This exhibit demonstrates optical illusion. By entering the opening at the back into the compartment and putting your head through the hole in the table, it creates the illusion that your apparently dis-embodied head is sitting on the table.

Hexagon Maze



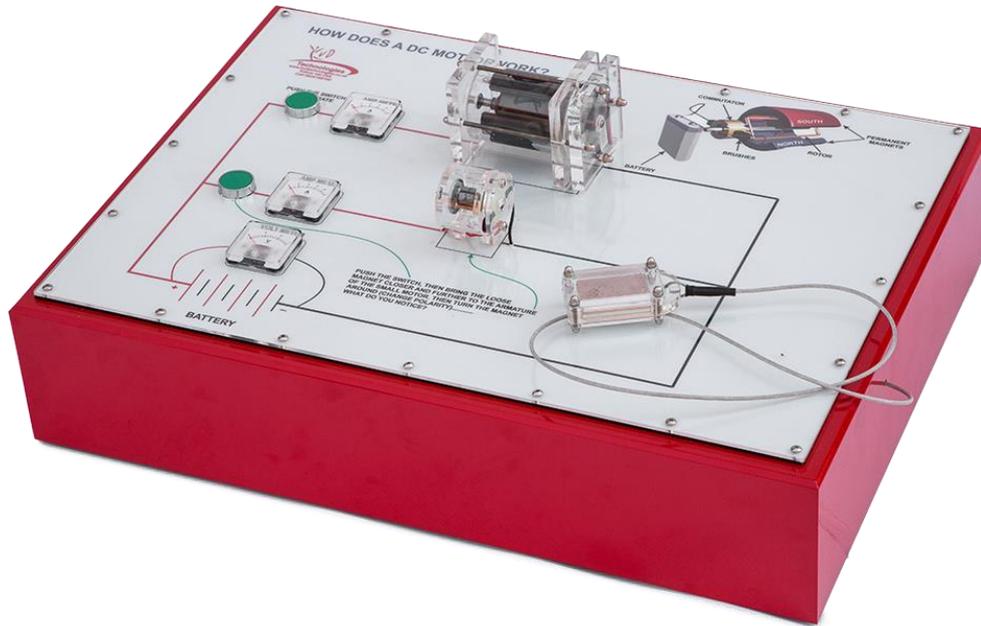
Arrange the 19 hexagons so that there is a path from the start to the end going through each hexagon. There are 3 hexagons with a straight path, 9 hexagons with a 60° turn and 7 hexagons with a 120° turn.

Hinged Triangle



Arrange the 4 shapes to form a square then rearrange them to form a triangle. There are hinges at A, B and D.

How does a DC motor work - Demountable



Demonstrates how a DC motor operates.

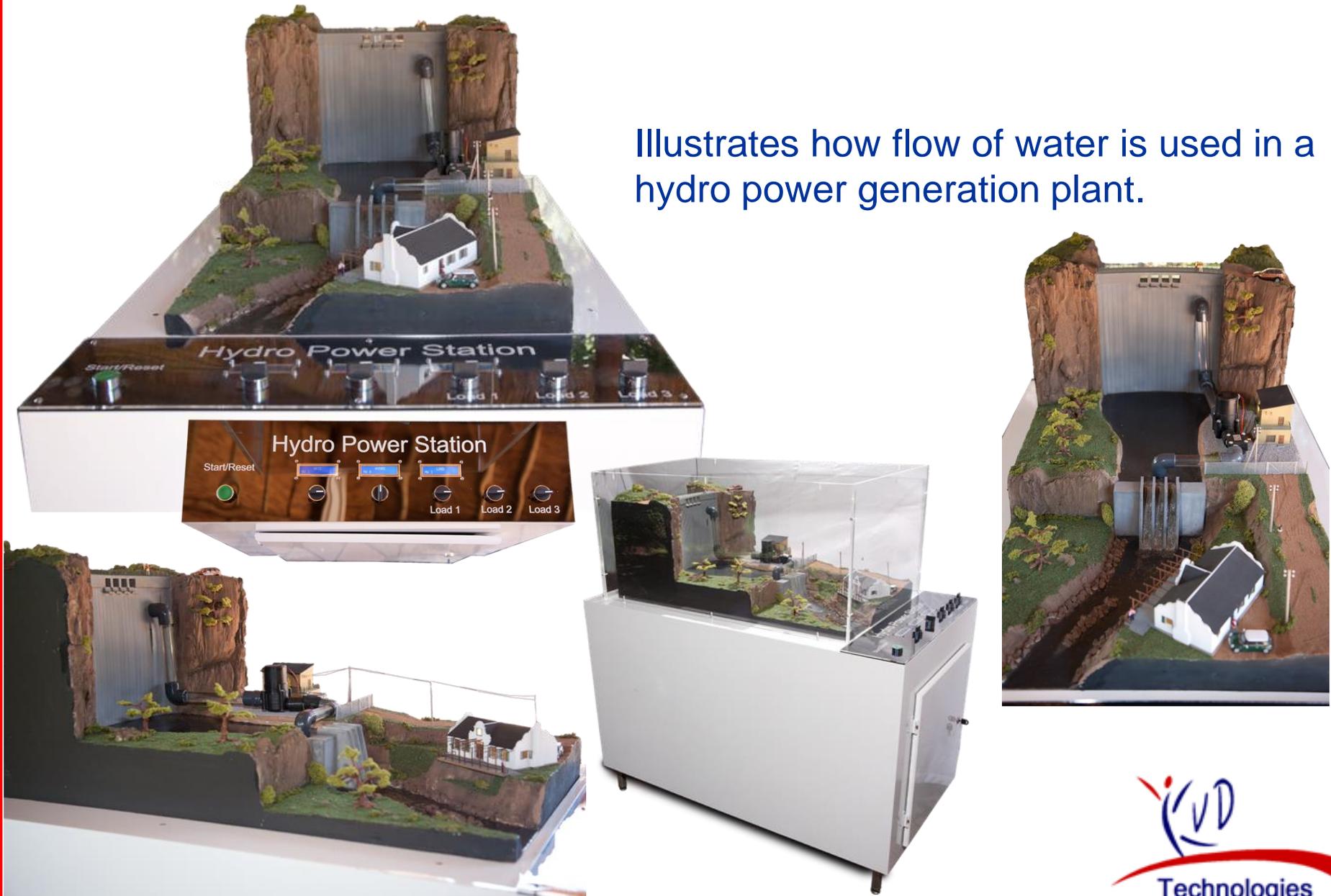
Human Battery



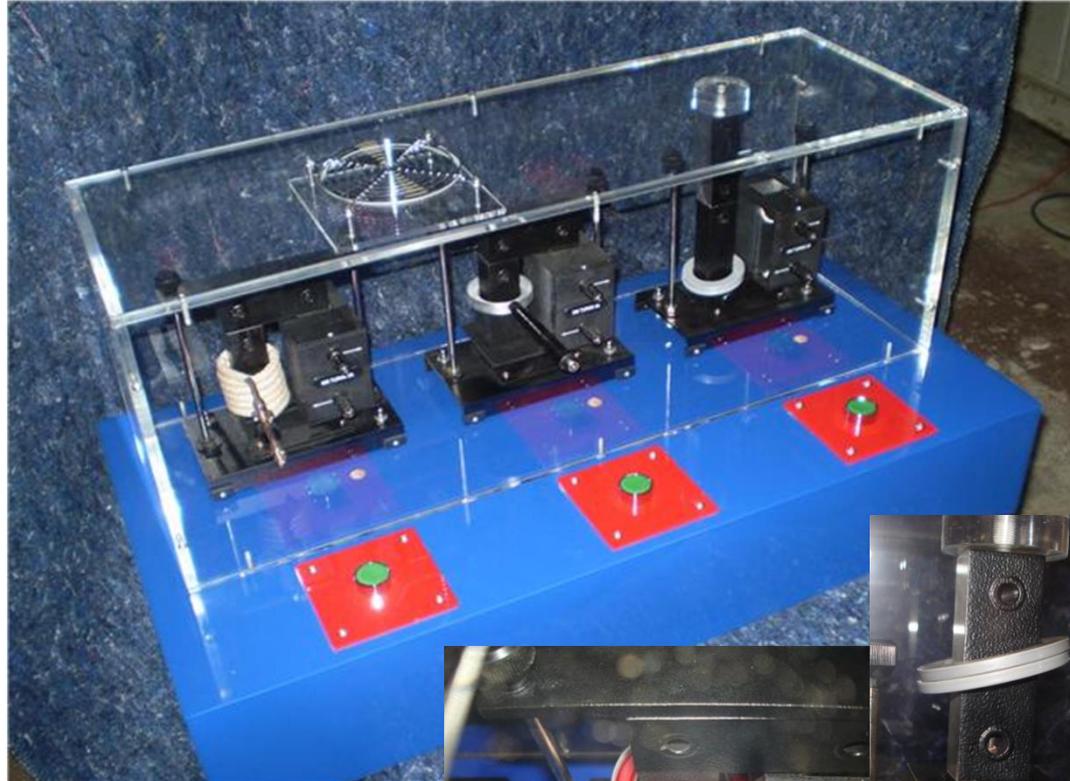
When placing your hands on the two metal plates, a thin film of sweat acts like acid in a battery, producing a chemical reaction with the copper plate and a chemical reaction with the aluminium plate. The two hands create different charges—one positive and one negative. The difference in charges produces an electrical current which becomes evident on the volt meter.

Hydro Power Generation Plant

Illustrates how flow of water is used in a hydro power generation plant.



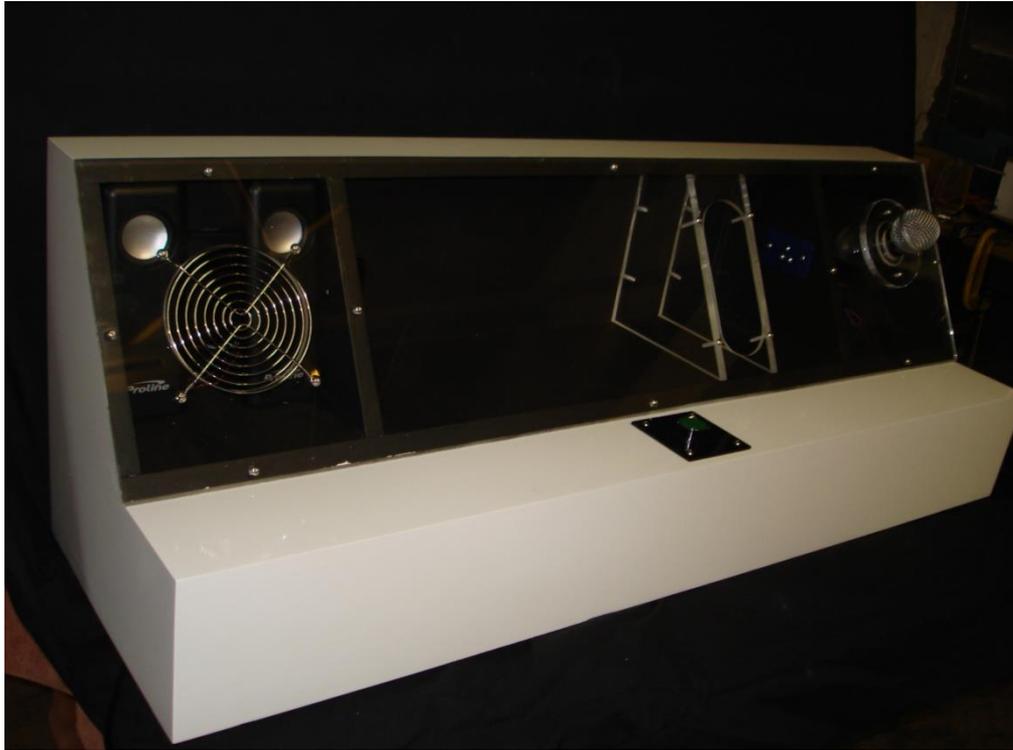
Induction Demonstrator



Three exhibits in one. One transformer is used to heat a nail becoming evident as the nail turns red. The next transformer is used to melt wax. The third transformer is used to levitate aluminium disks by induced eddy currents. The aluminium disks also demonstrates Lenz's Law.



Infrared Communicator



Transmit sound by modulating infrared light. The transmission can be interrupted by placing your hand in the slot provided. The infrared light is visible by using a camera on a cell phone.

Infinity Mirror



An object placed between two facing mirrors will be reflected infinitely between the two mirrors.

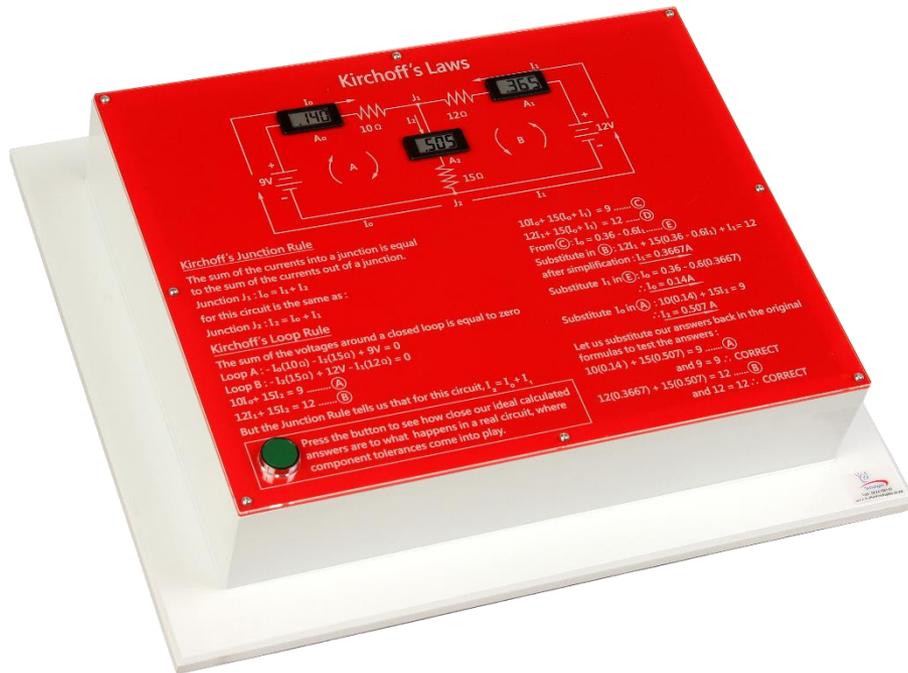


Jacob's Ladder



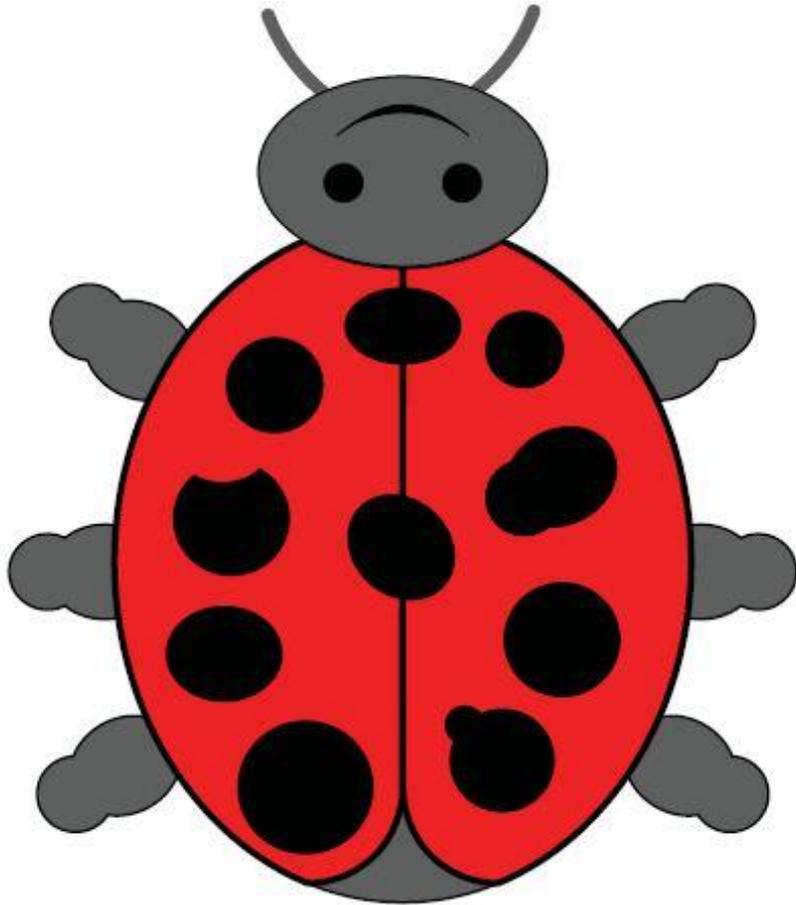
A bolt of electricity travels up two rods and creates a lightning effect.

Kirchhoff's Laws



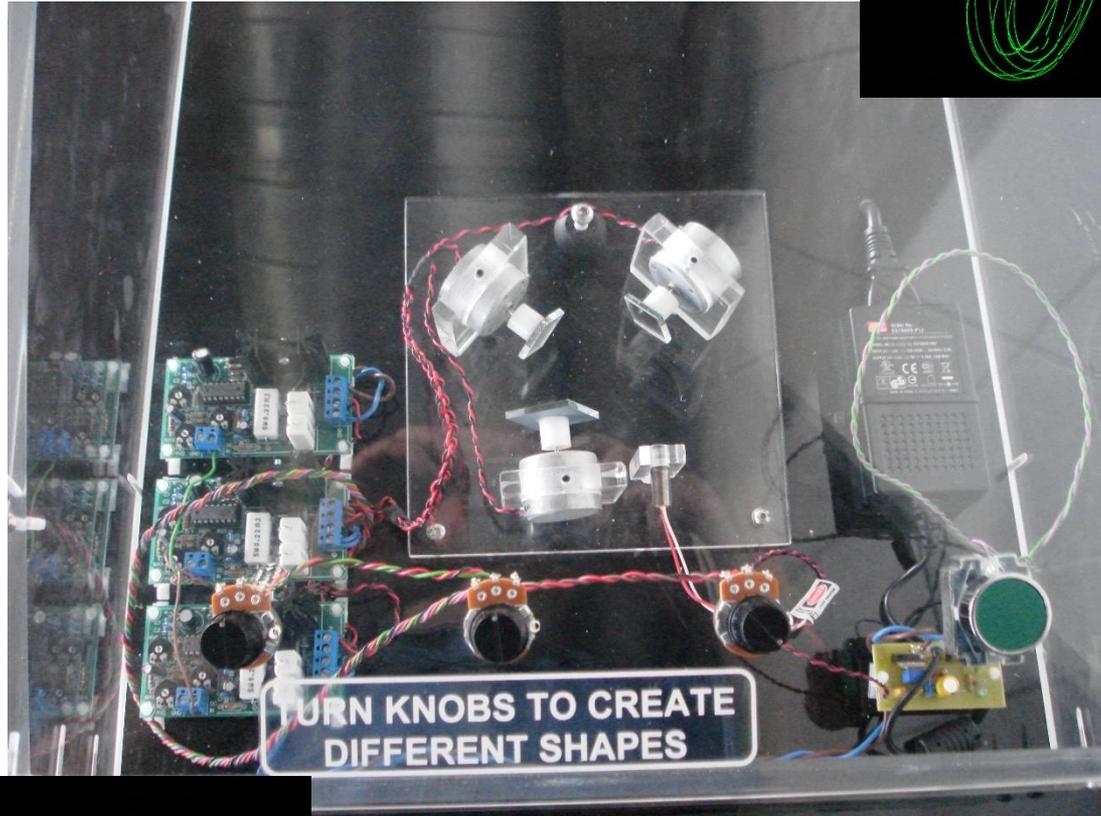
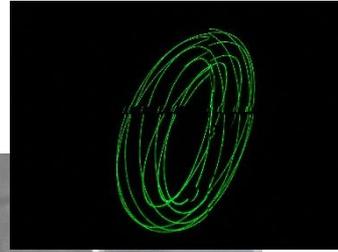
Kirchhoff's Circuit Laws deal with the currents and voltages in electrical circuits. Widely used in electrical engineering, they are also called Kirchhoff's rules or simply Kirchhoff's Laws.

Ladybird

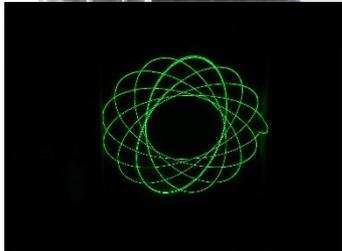


The dots of the ladybird are all slightly different; recognising these small differences is a step towards letter recognition which has to be mastered before learners can start to read. Age 5.

Laser Loops



Different patterns can be created with laser by changing the speed of 3 spinning mirrors.



Lenz's Law



A piece of steel and a magnet of similar weight are placed inside identical non-magnetic aluminium tubes. When the tubes are flipped upside-down the steel falls to the bottom with minimal resistance while the magnet travels significantly slower due to induced eddy currents. Slots are cut in the tubes in order for the steel and the magnet to be visible.

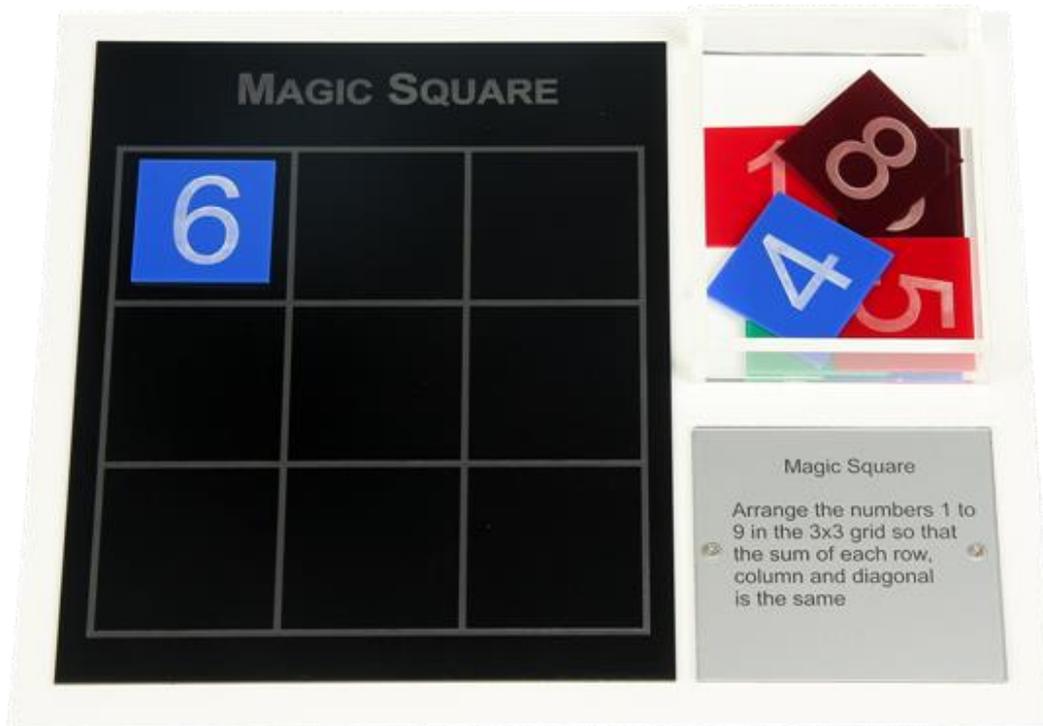


Luminous Minerals



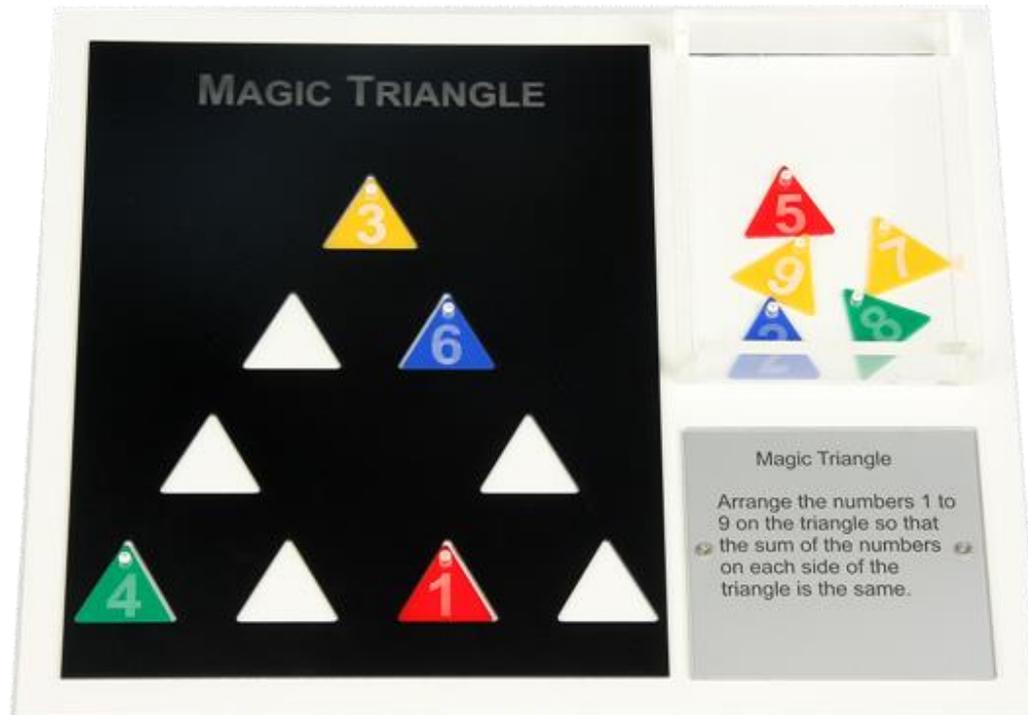
Dull mineral rocks explode into a kaleidoscope of colour when subjected to black fluorescent light.

Magic Square



Arrange the numbers 1 to 9 in the 3 x 3 grid so that the sum of each row, column and diagonal is the same.

Magic Triangle



Arrange the numbers 1 to 9 on the triangle so that the sum of the numbers on each side of the triangle is the same.

Magnetic Field with Needles



Needles point in the direction of magnetic field lines as the handle is turned.



Mini Scanner/X-Ray Demonstrator



The mini scanner demonstrates the principle of scanning and X-Ray of the Human Body.

Nu Clear Reactor Demonstrator



When the control rods are drawn up out of the fuel elements, the reactor starts to produce power. The Cerenkov LEDs start to light up. The cooling pump rotates, and LEDs in the cooling water pipes start to “flow”. Initially all LED’s are blue (cold) but gradually turn towards red in the pipe to the steam generator as the water heats. The return from the steam generator and to the reactor is cooler (but not blue). As the rods are further withdrawn, the Cerenkov LEDs glow brighter proportional to the distance. The temperature of the outgoing water also rises (redder or more intense).

Ohm's Law



Illustrates Ohm's Law practically by interactively changing the values of Volts, Amperes or Ohms.

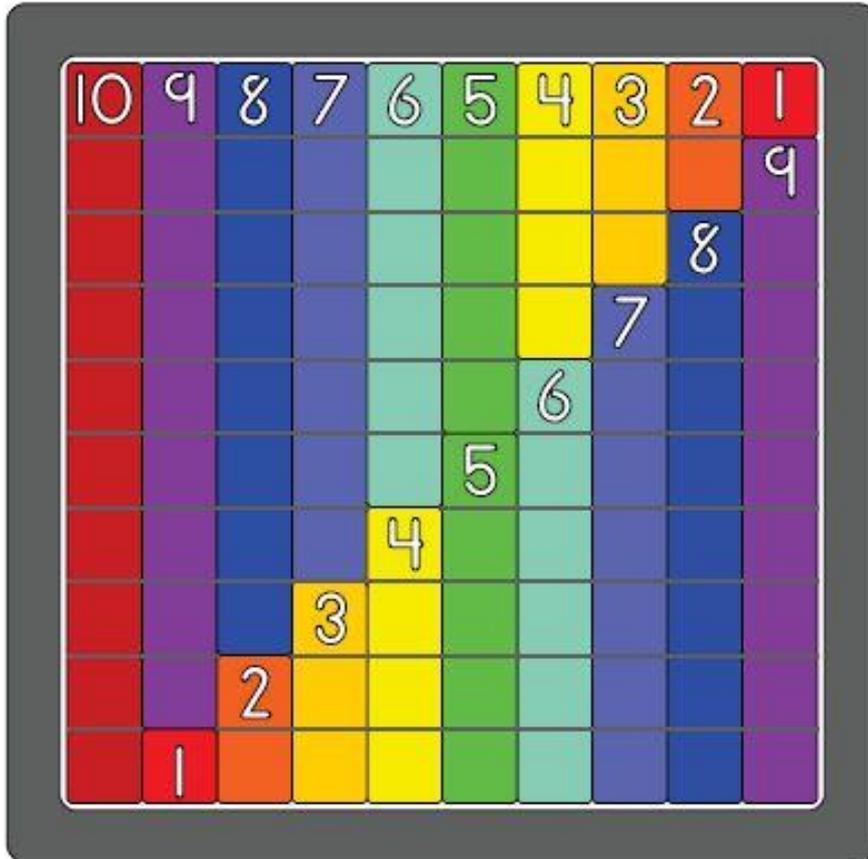
Occluded Artery



Turn this model over to see the difference between having a healthy cholesterol level and having high cholesterol.

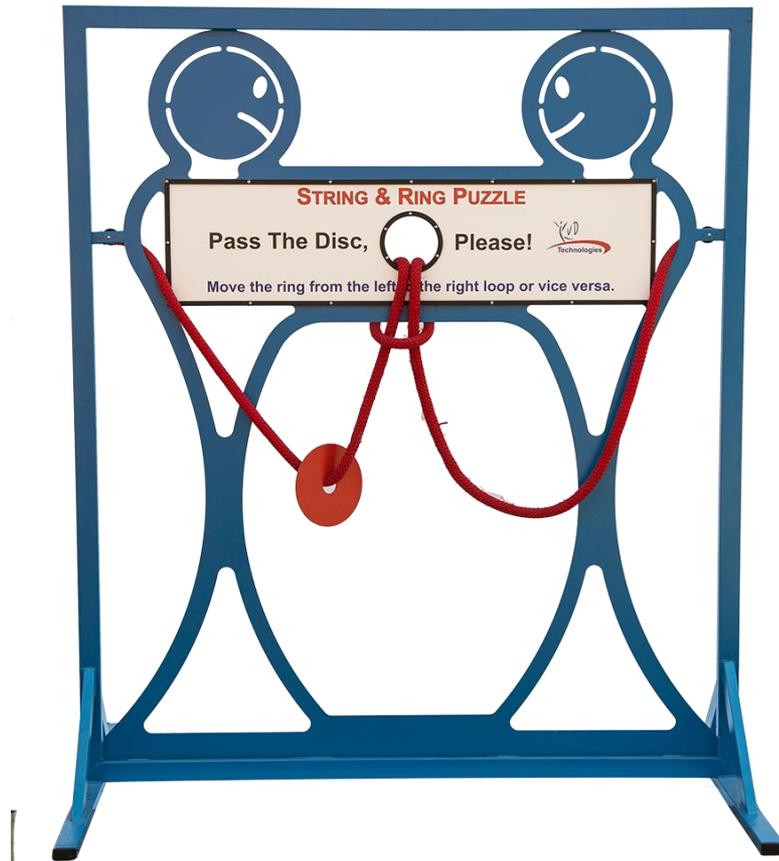
Watch how the blood in the normal artery moves swiftly to the top. Meanwhile notice that the blood in the occluded artery slows or completely stops. The same thing can happen in the human body when excess cholesterol in the bloodstream builds up and hardens on artery walls. When cholesterol deposits, called plaque, build up to the point where blood flow slows or completely stops, chest pain, heart attack, or stroke can occur.

One to Ten



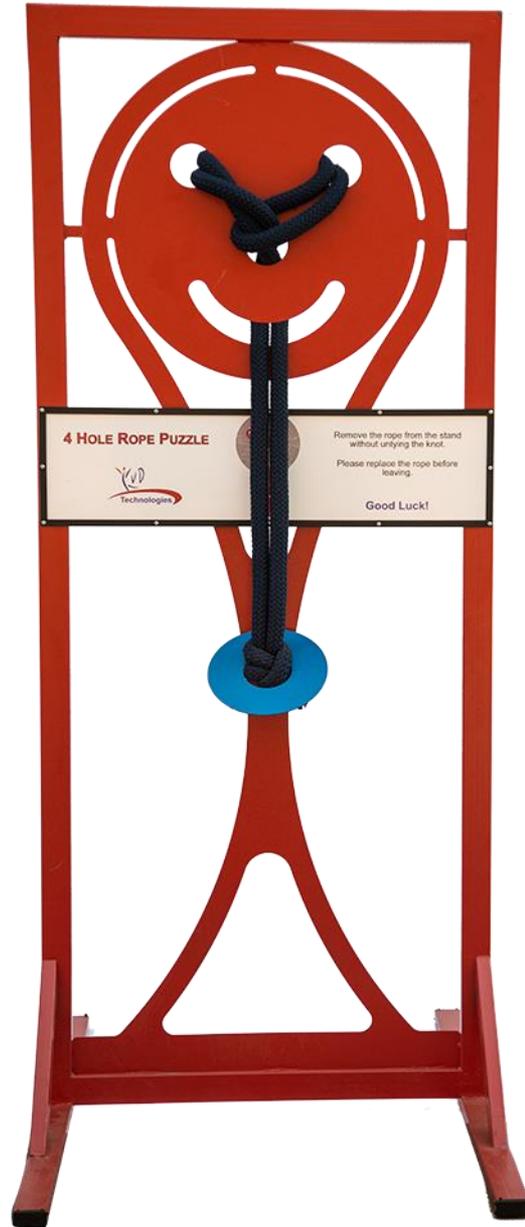
Colourful bars of different lengths in a frame assist with the first steps of addition and subtraction. Age 5-7.

Outside Rope Puzzle – String a Ring



Move the ring from left to the right loop or vice versa.

Outside Rope Puzzle – 4 Hole Rope Puzzle



Pedal for Power



Alternative energy is illustrated where power is generated by peddling (kinetic energy) and used to power different devices, such as a radio or a fan.

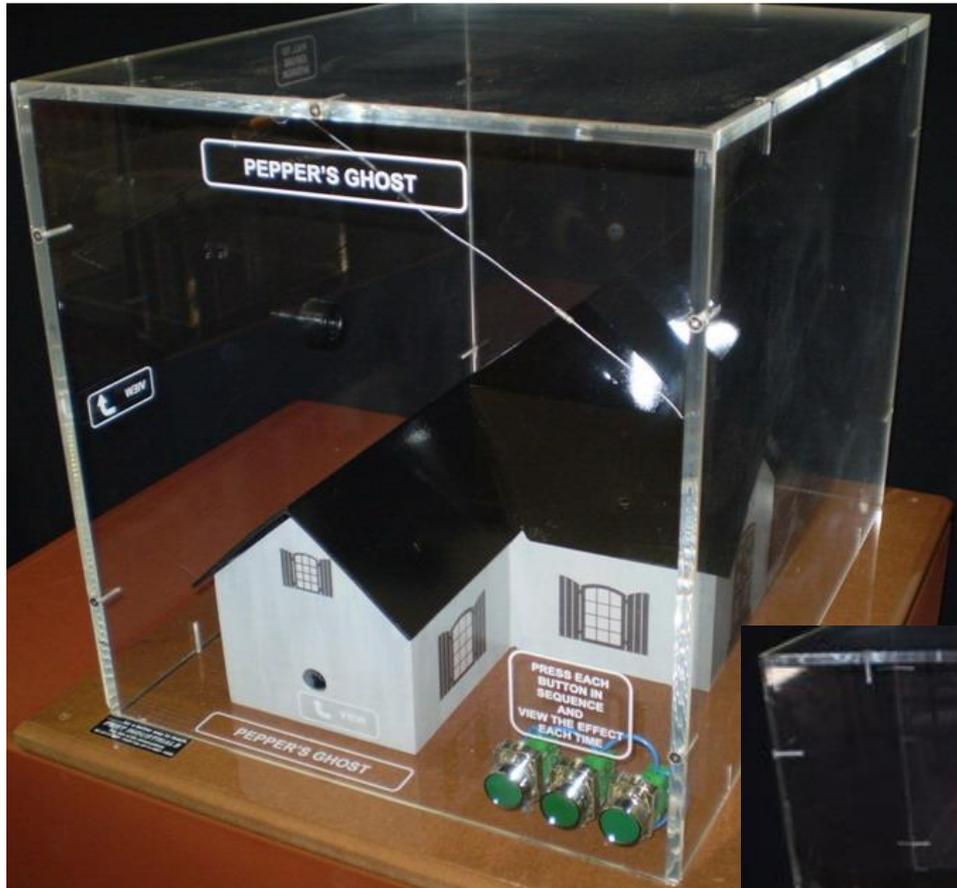


Pentomino



The pentomino puzzle consists of 12 different shapes that can be formed with 5 squares. Use all 12 pieces to build different size rectangles.

Pepper's Ghost



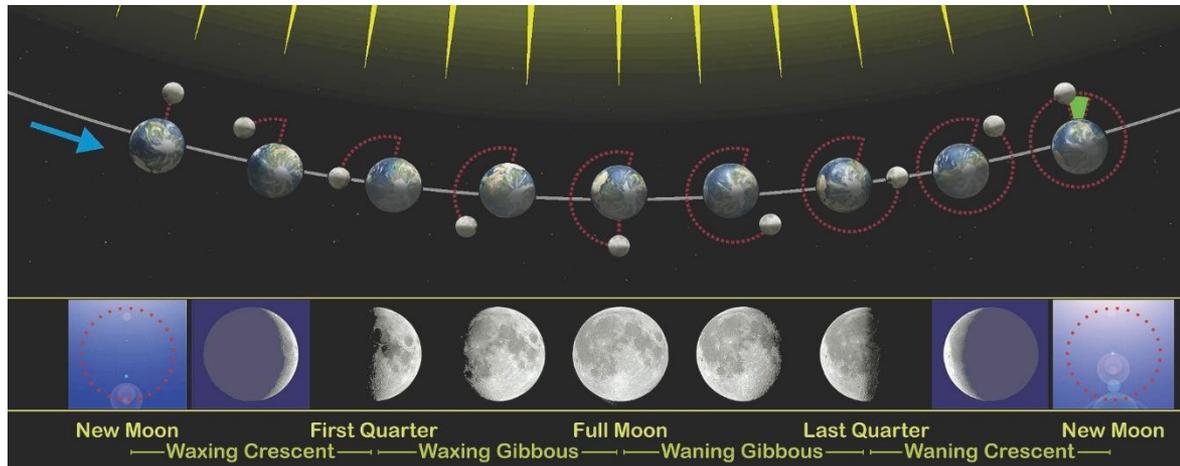
An illusionary technique where using a plate glass and special lighting techniques, objects seem to appear or disappear.



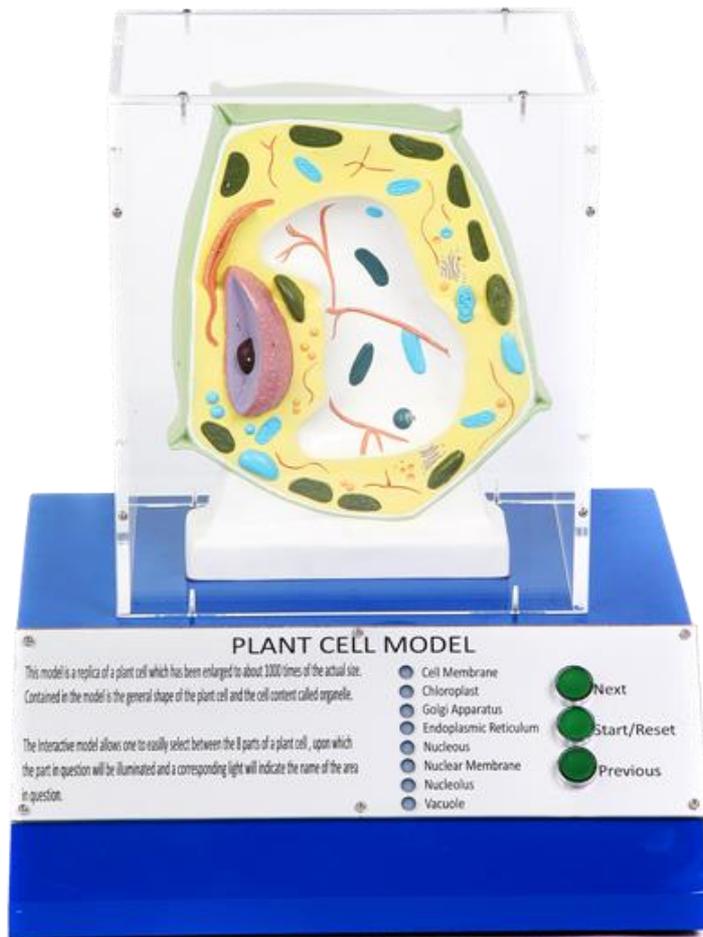
Phases of the Moon



Demonstrates the different phases of the moon by pressing a button.



Plant Cell



Shows the general shape of a plant cell and its organelle at approximately 1000 times life size.

Plasma Plate



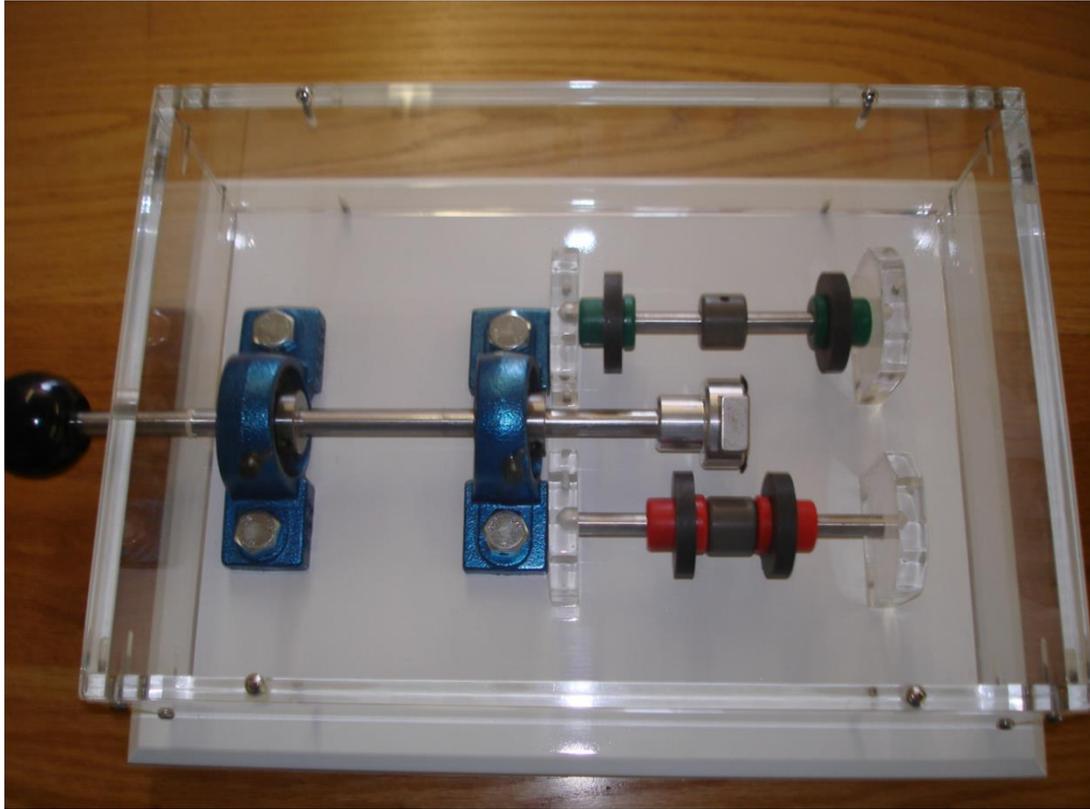
A Plasma Plate is a clear glass plate filled with a mixture of various Noble gasses with a high voltage electrode in the centre of the sphere. Plasma filaments extend from the inner electrode to the outer glass insulator, giving the appearance of multiple beams of coloured light.

Power Usage Demonstrator – Boiling Kettles



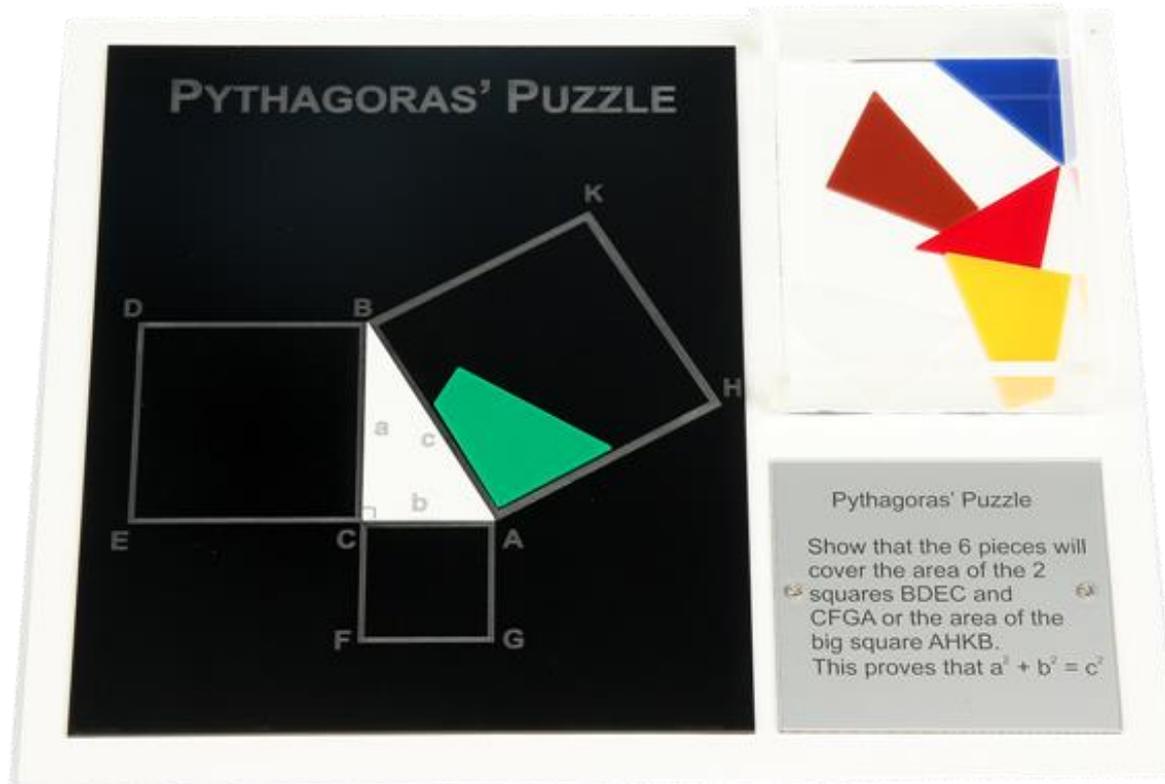
Power consumption is measured by filling two kettles to different levels with water and getting it to boiling point.

Pumping Magnets



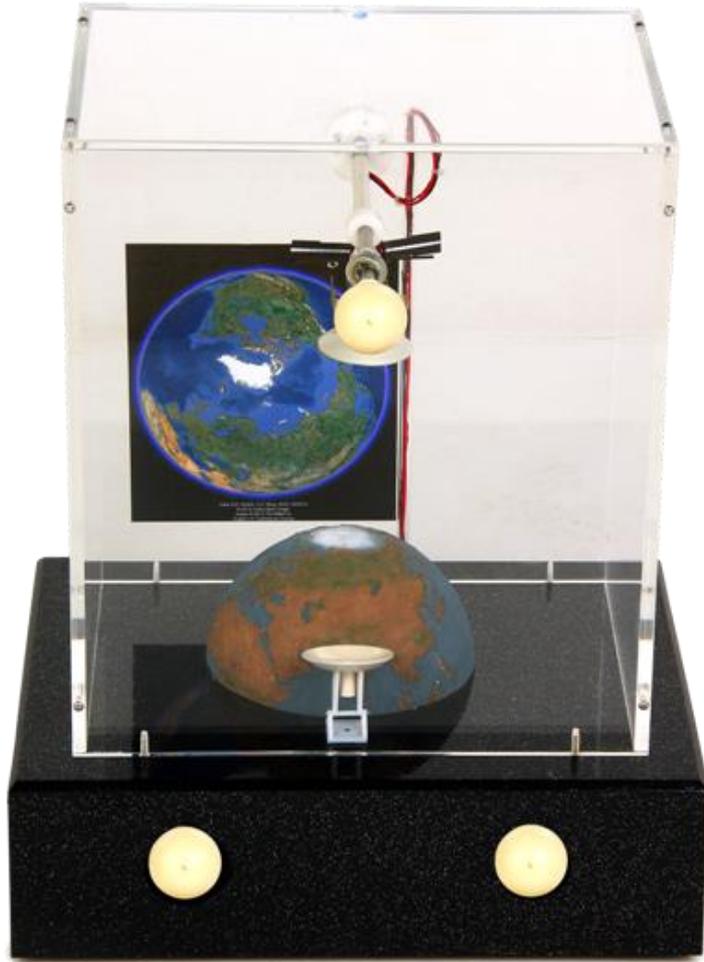
Illustrates how a rotating magnet can be used to attract and repel other magnets to realize a pump.

Pythagoras' Puzzle



Show that the 6 pieces will cover the area of the 2 squares BDEC and CFGA or the area of the big square AHKB. This proves that $a^2 + b^2 = c^2$

Remote Sensing Satellite



This exhibit demonstrates how a remote sensing satellite is used to gather information about the earth or other spacial bodies and how that information is then sent back to the earth's surface.



Rocks Detective



Illustrates different kinds of gems from various places.



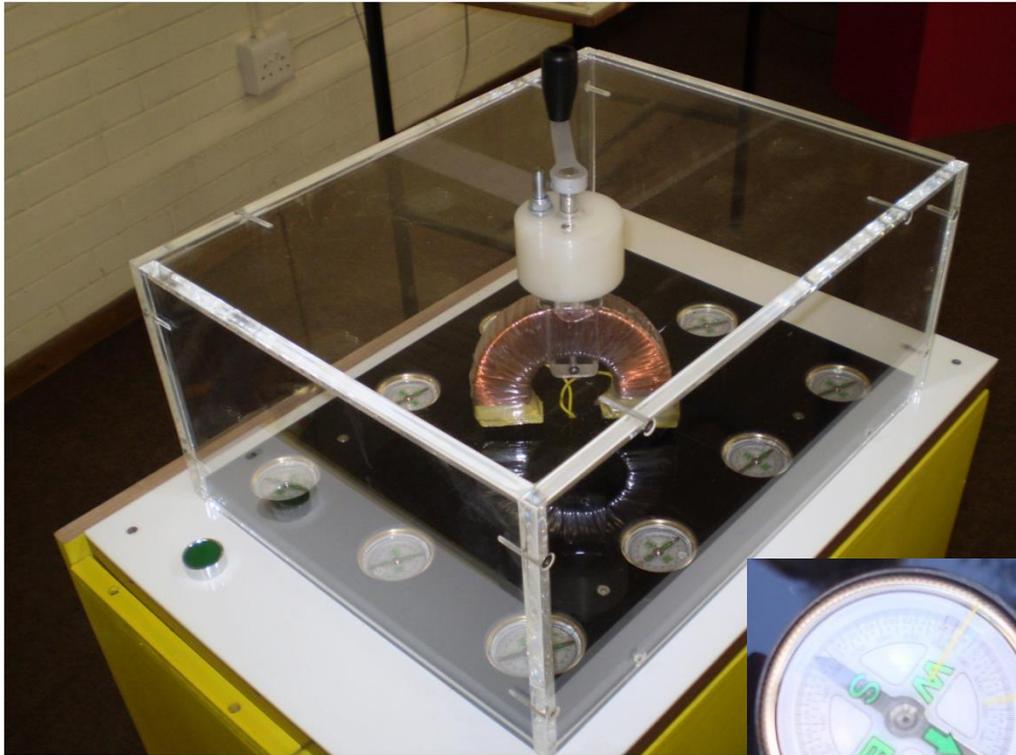
Rotating Magnets with Iron Filings



Iron filings are oriented in the magnetic field produced by rotating magnets.



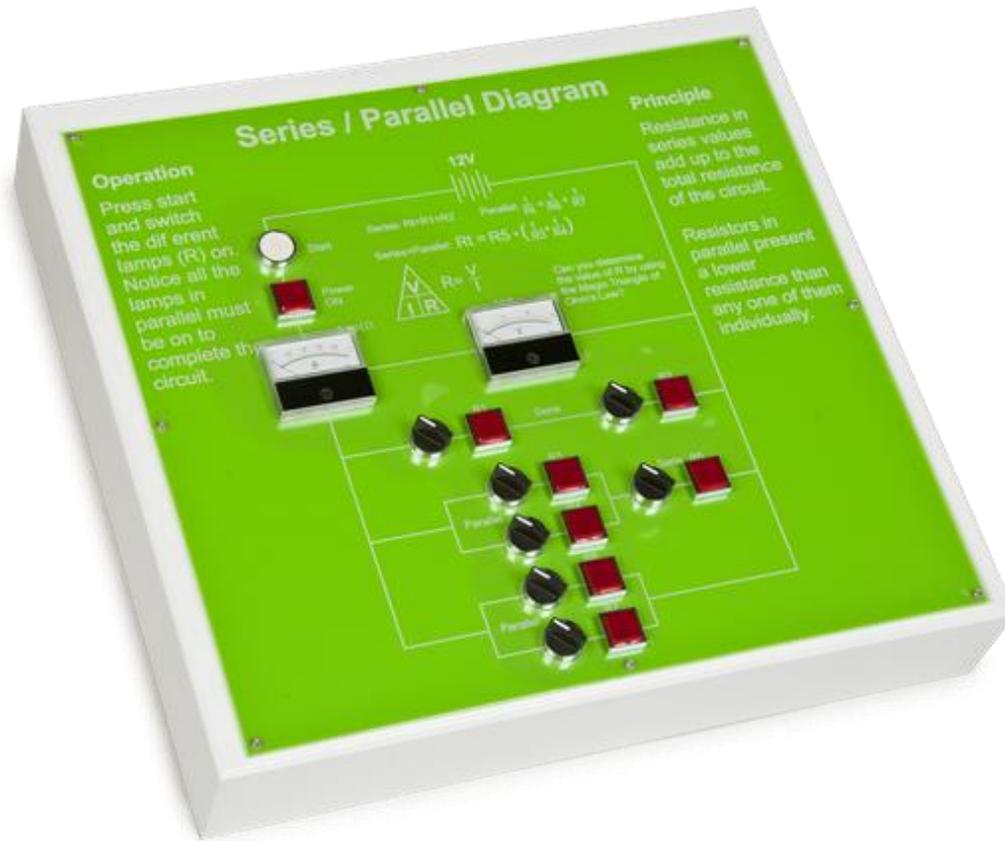
Rotating Electro Magnets with Compasses



By rotating the electro magnet the compasses change direction to indicate the direction of the magnetic field.

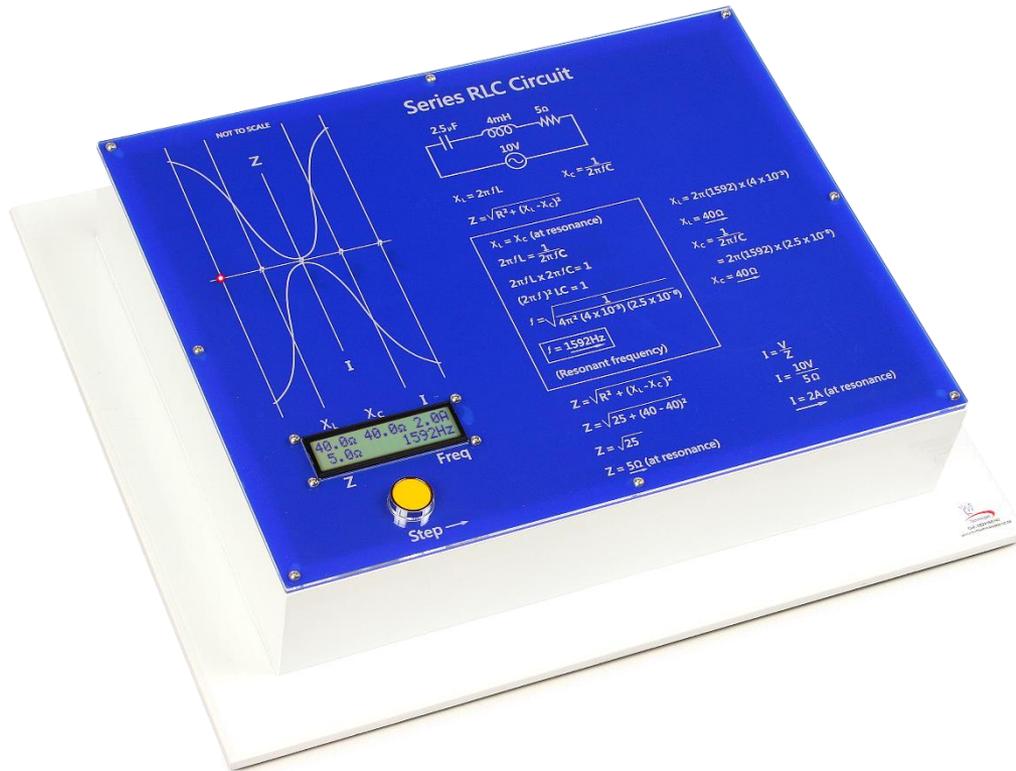


Series/Parallel Diagram



Resistance in series values add up to the total resistance of the circuit. Resistors in parallel present a lower resistance than any one of them individually.

Series RLC Circuit



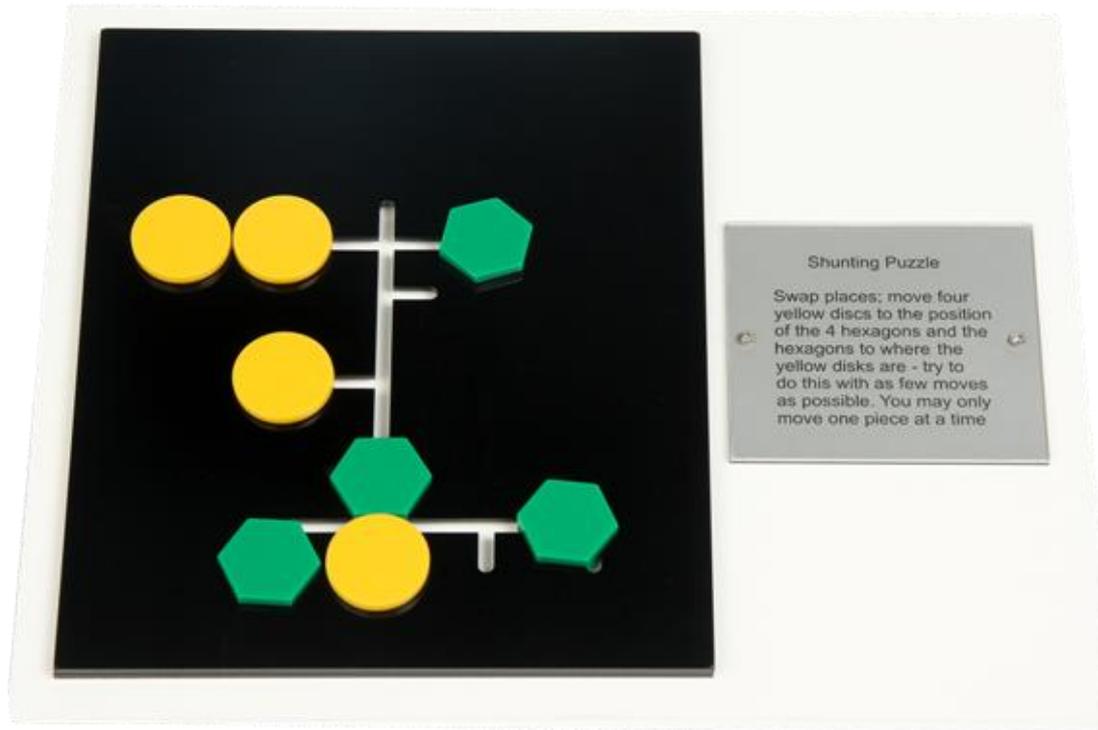
An LC circuit can store electrical energy oscillating at its resonant frequency. A capacitor stores energy in the electric field between its plates, depending on the voltage across it, and an inductor stores energy in its magnetic field, depending on the current through it.

Seven Segment Demonstrator



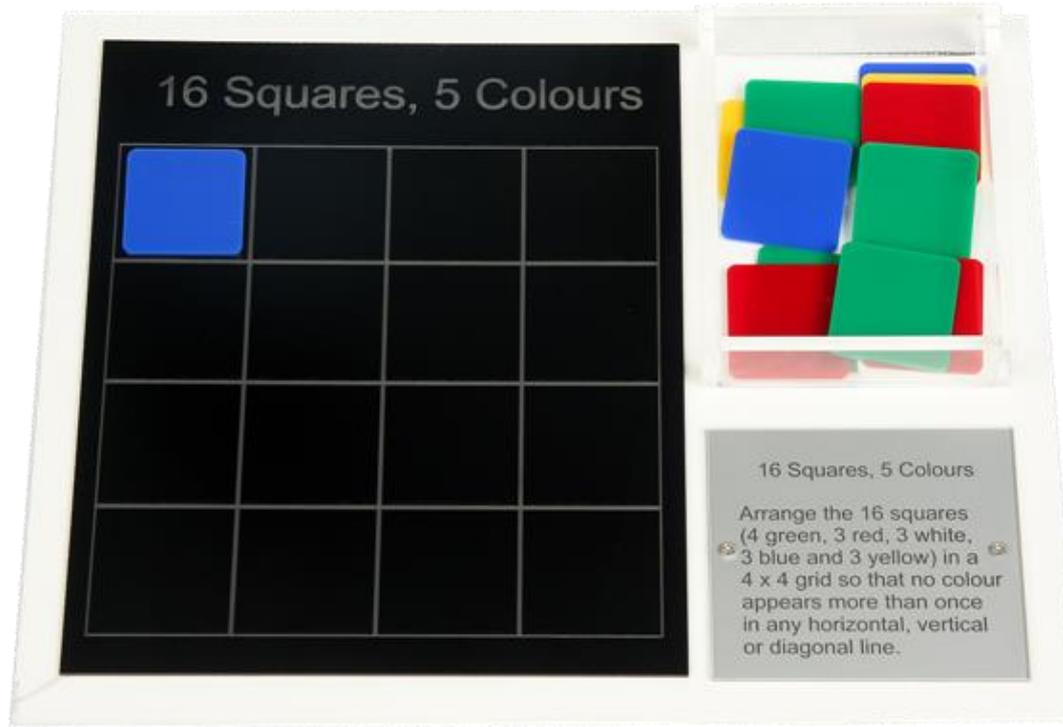
Demonstrates the inputs necessary to form a number on a 7 segment LED display.

Shunting Puzzle



Swap places: move four yellow discs to the position of the 4 hexagons and the hexagons to where the yellow disks are – try to do this with as few moves as possible. You may only move one piece at a time.

Sixteen Squares, Five Colours



Arrange the 16 squares (4 green, 3 red, 3 white, 3 blue and 3 yellow) in a 4 x 4 grid so that no colour appears more than once in any horizontal, vertical or diagonal line.

Smelly



This exhibit identifies sense of smell by releasing different odours by squeezing the bottles.

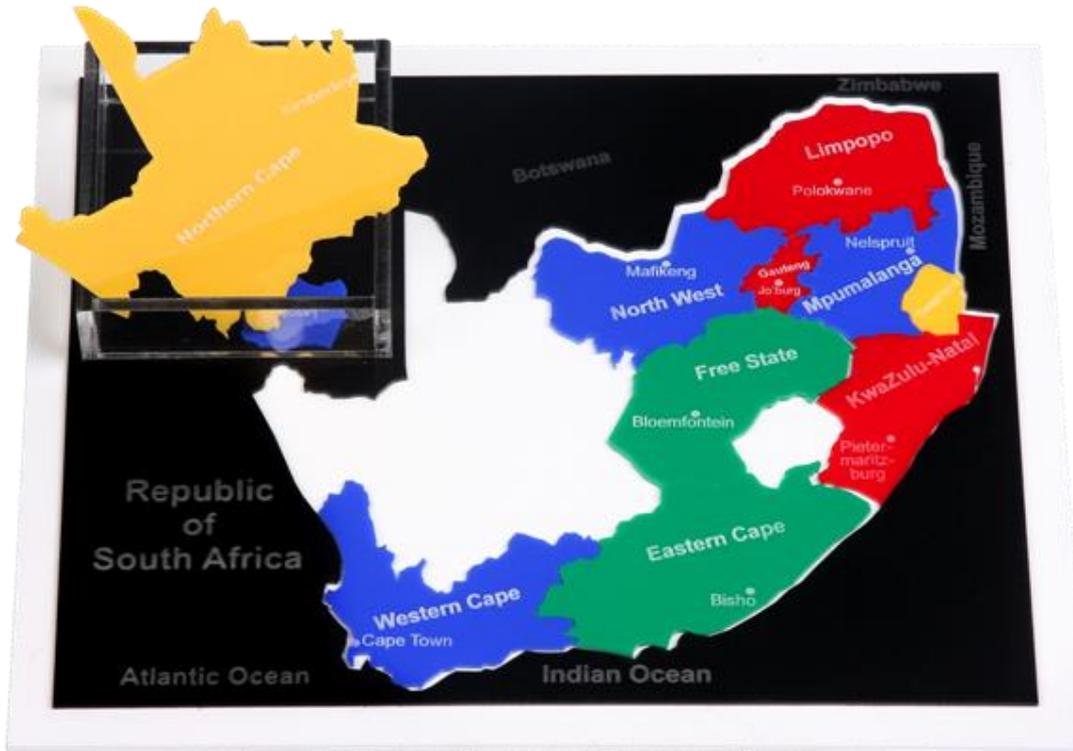


Solar Energy Demonstrator (Ball & Fan)



Energy is created by lamps (representing the sun) shining on a solar panel. This energy is used to power a fan. The intensity of the lights can be varied resulting in increased and decreased air flow, indicated by a floating ball.

South African Map Puzzle



This puzzle familiarise learners with the geographical outlay of South Africa. Every piece of the puzzle is a different colour and represents a province in South Africa. When the puzzle is completed correctly a map of South Africa has been created.



Spinning Magnets



Illustrates the principle of magnetism. Opposites attract - similar poles repel. This is also the principle of an electric motor. (Rotor and Stator).

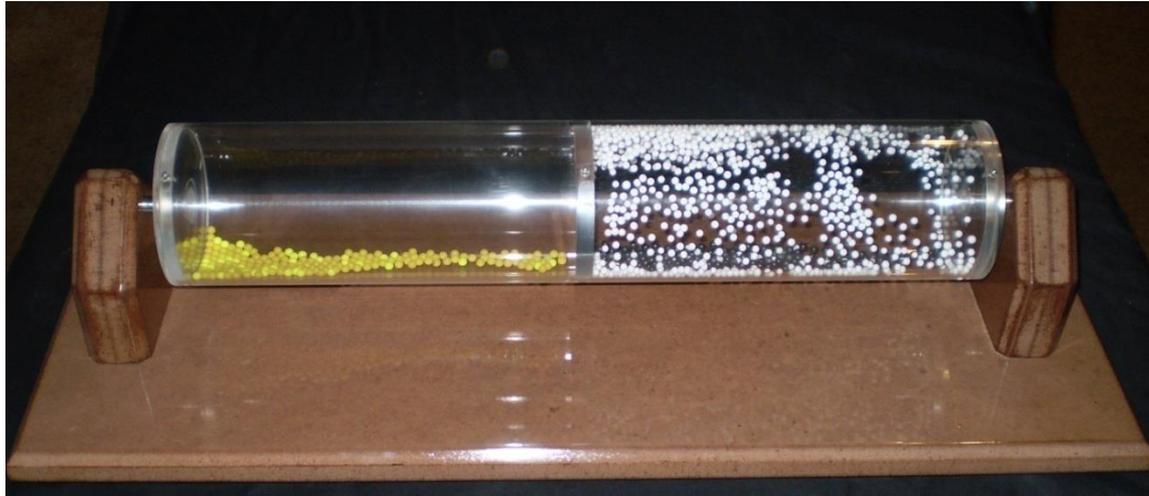


Square Wheel Exhibit



A square wheel can roll smoothly if the ground consists of evenly shaped inverted catenaries of the right curvature and size.

Statics Demonstrator



Illustrates the effect of static electricity on polystyrene balls.

Steady Hand



This exhibit is to test your steady hand.

Stirling Engine



A Stirling engine is a heat engine operating by cyclic compression and expansion of air or other gas, the working fluid, at different temperature levels such that there is a net conversion of heat energy to mechanical work.

Stomachion of Archimedes



Arrange the 14 pieces to form a square. There are 536 different solutions.

Sugar Level



The A1C test is an important blood test done by your healthcare professional. Using a meter at home can tell you your blood sugar (also known as blood glucose) at any one specific time. However, the A1C test gives you an overall picture of your blood sugar management over the past 3 months.

Sundial



The sundial determines the time of day by using the position of the Sun. As the sun moves across the sky, the shadow-edge aligns with different hour-lines.



Talking Kiosk – Touch Screen



The Talking Kiosk is an interactive panel that plays a specific audio track that is linked to specific non-mechanical buttons that are pressed. The panel is a high quality image that is placed behind a clear Perspex protection cover. When a user's finger comes in close proximity or touches a specific part of the image it will play a specific recording linked to that part of the image.

Tangram Puzzle



Use the seven pieces, called "tans", to build the shapes shown above. All seven pieces have to be used and they may not overlap.

Telescope Viewer (Reflector & Refractor)



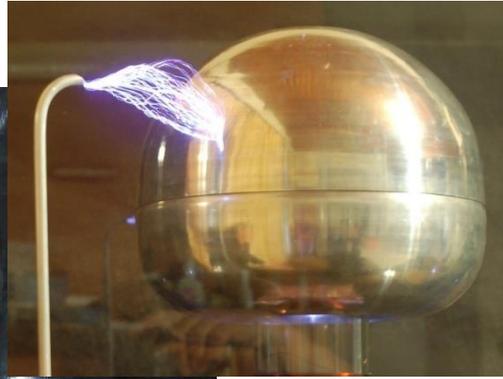
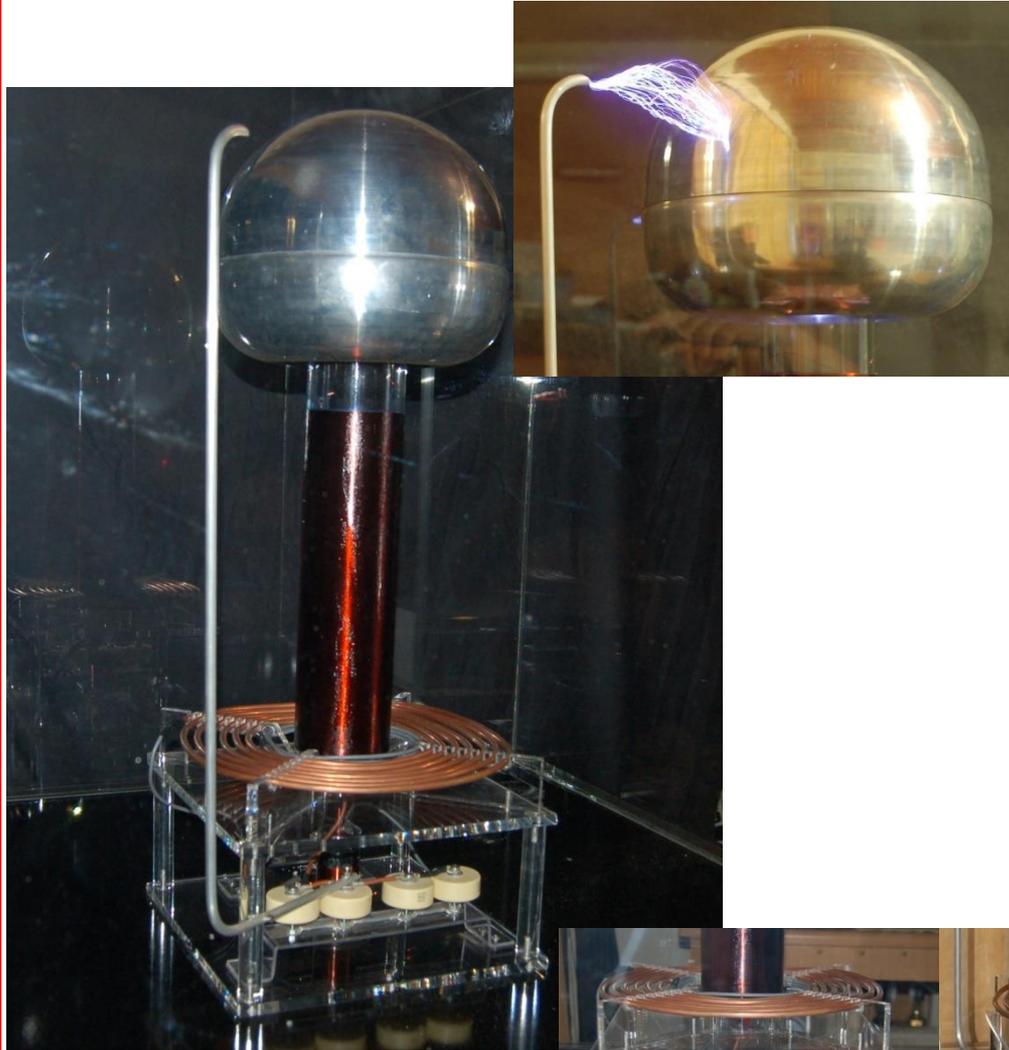
This exhibit demonstrates the working of the lenses in a telescope. When the top laser is activated the light shines through the first lens. The light is diverted downwards to project onto the second lens. When the bottom laser is activated the light shines through the first lens. The light is diverted upwards to project onto the second lens. The second lens diverts the light parallel to its original path onto the eye.

Tesselations



A Tessellation is a repeating pattern of polygons that cover an area without gaps or overlaps. Use the diamonds or triangles to tile the area with one of the patterns shown or create your own design.

Tesla Coil



A Tesla coil is a type of resonant transformer circuit that is used to produce high voltage, low current, high frequency alternating current electricity. The generated electricity is discharged via a metal dome.



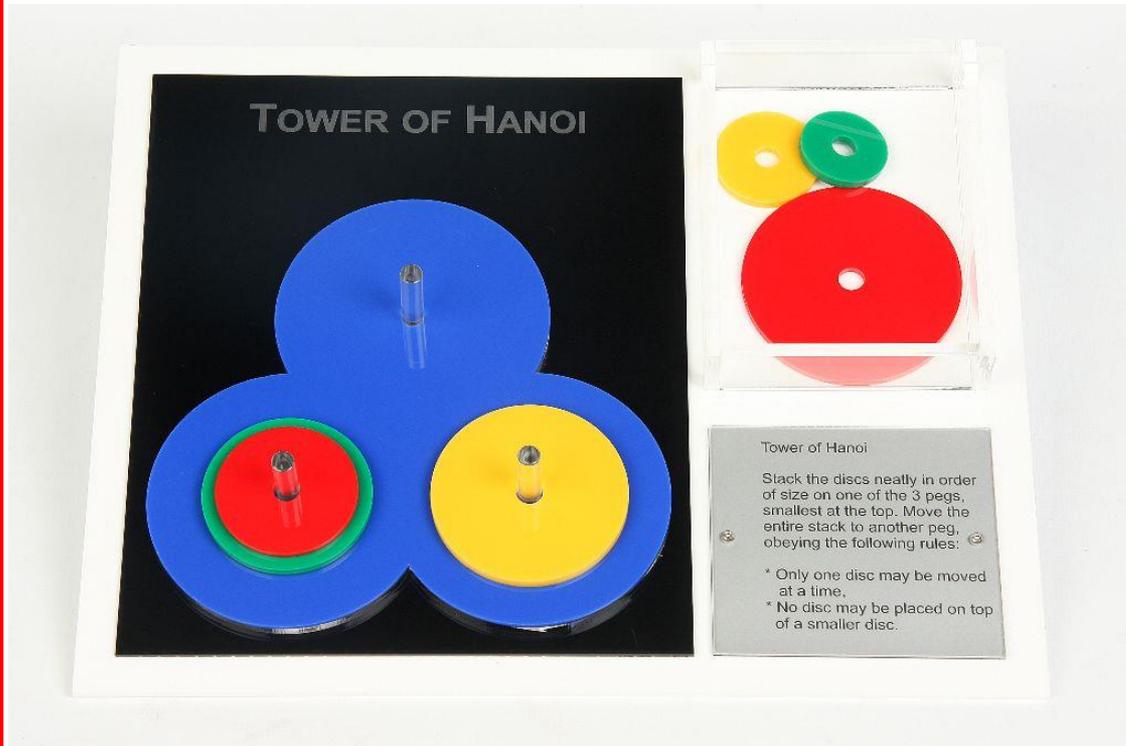
Thermal Conductors & Insulators



Thermo chromic paper is a type of paper that is very sensitive to a change in temperature. When the paper is exposed to a sudden change in temperature, discolouration of the paper occurs. The change of the papers colour depends on the affected area and the temperature of the object that is brought into contact with the thermo chromic paper



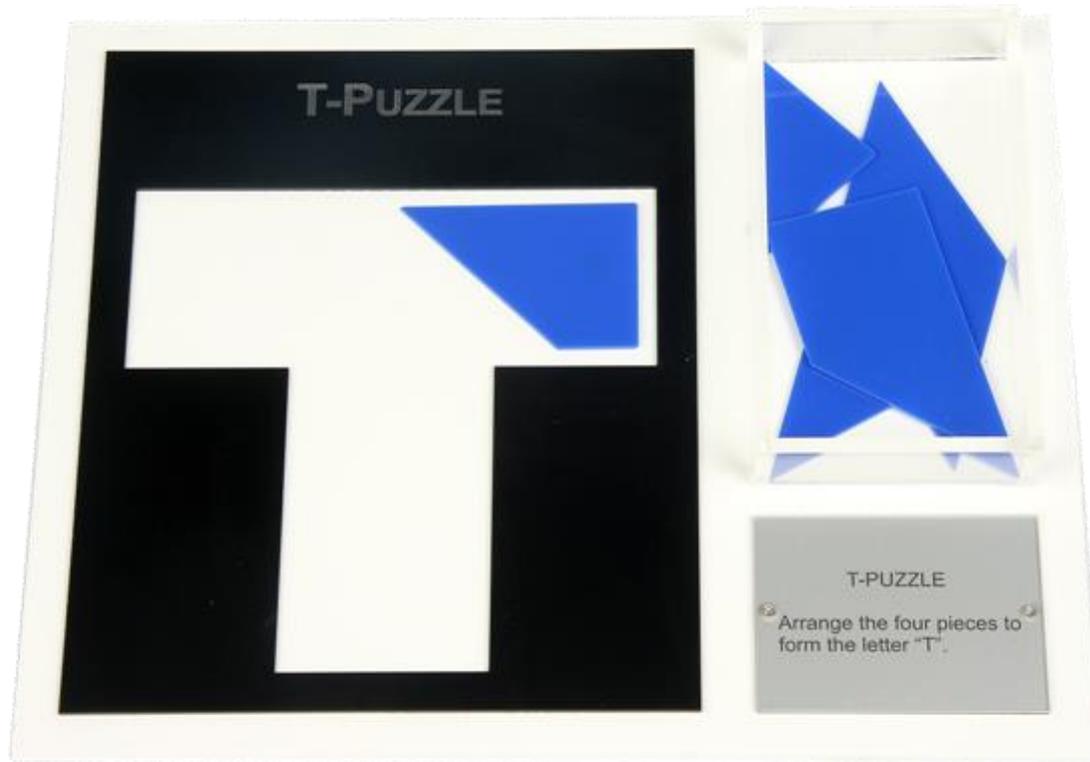
Tower of the Hanoi



Stack the discs neatly in order of size on one of the 3 pegs, smallest at top. Move the entire stack to another peg, obeying the following rules:

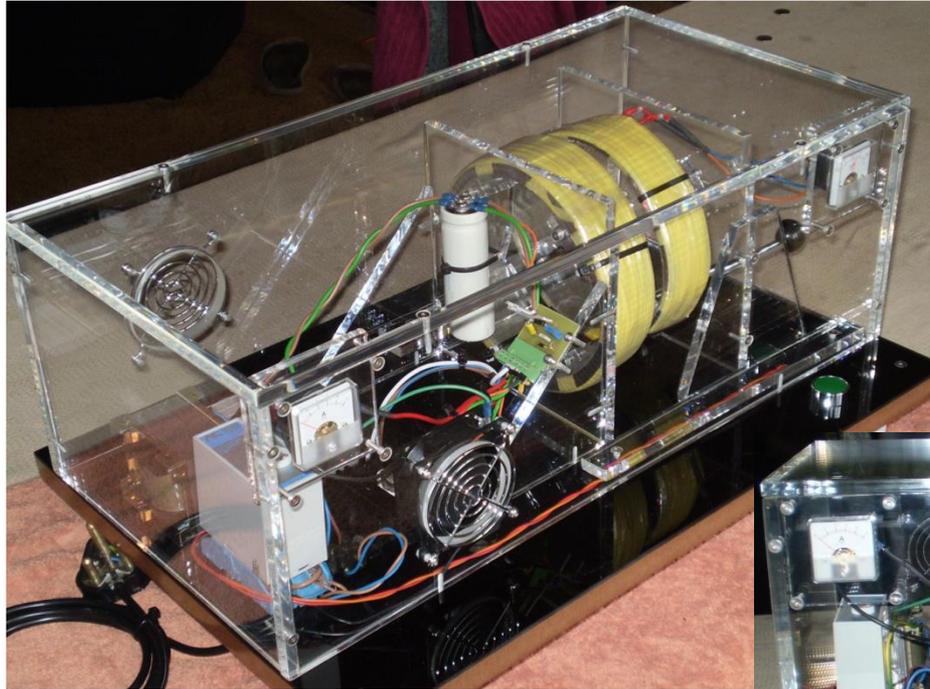
- Only one disc may be moved at a time.
- No disc may be placed on top of a smaller disc.

T-Puzzle

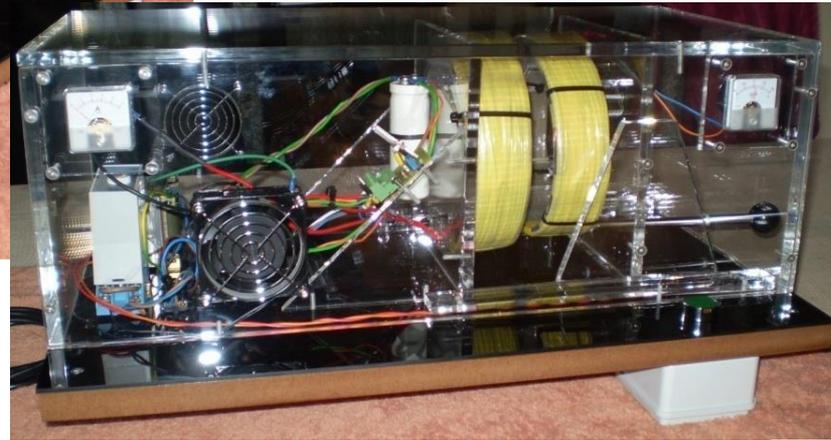


Arrange the 4 pieces to form the letter "T".

Transformer Principle Demonstrator



Illustrates how a transformer works. Electricity is converted into magnetic energy and then coupled magnetically to a secondary coil.



Transformer Step Up Step Down



Illustrates how a transformer step up or step down to change voltage according to the demand.



Tree Classification

Tree classification

All living things are classified in different categories to help us group and name them. A dichotomous key can be used to identify a specific tree based on a set of questions with two options for answers.

Kingdom

Division

Class

Order

Family

Genus

Species

What to do?

Use the rolling wheels on the dichotomous key to identify one (or all) of the mystery trees.

1. Choose one of the mystery trees.
2. Go to start (wheel 1).
3. Use the info given about the mystery tree to answer the question on wheel 1, turn to see the alternative.
4. Follow the instructions on the wheels until you can name the tree and learn some more.

A Tree classification dichotomous key is a tool that allows the user to determine the identity of items in the natural world, such as trees. Keys consist of a series of choices that lead the user to the correct name of a given item. "Dichotomous" means "divided into two parts". Therefore, dichotomous keys always give two choices in each step.



Mystery tree

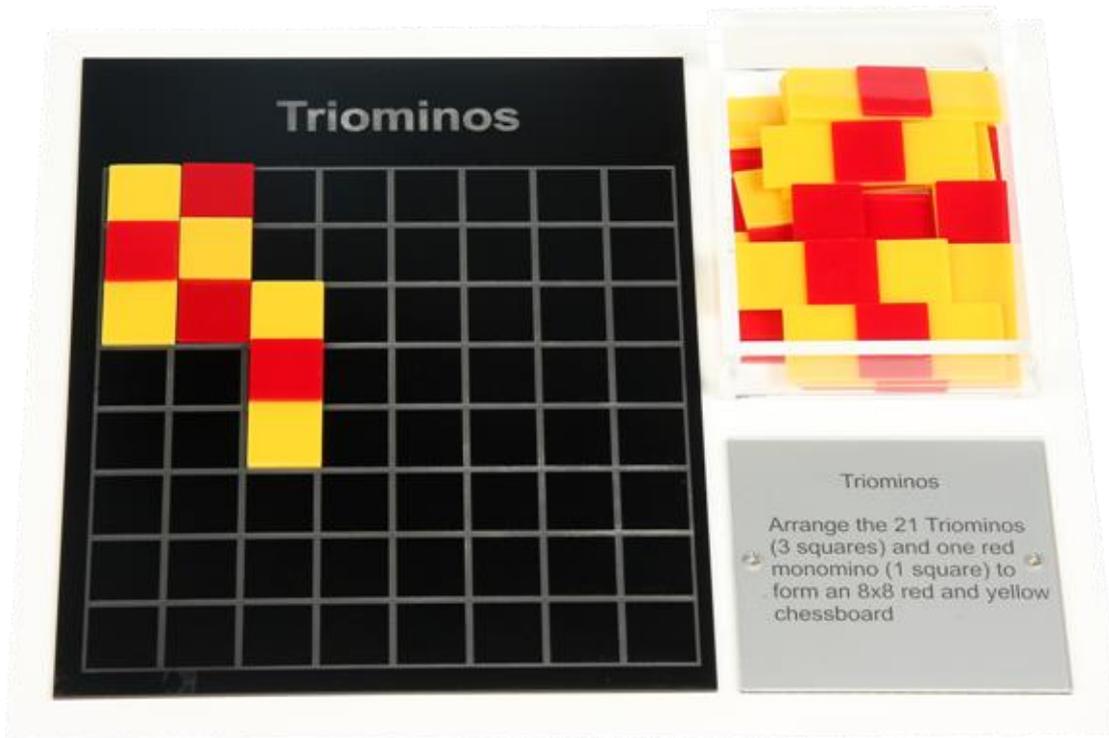
Fruits with seeds

Bark

Compound leaves

Small to medium sized evergreen tree. Found in mesic habitats across South Africa. Rough blackish bark and dark green leaves.

Triominos



Arrange the 21 Triominos (3 squares) and one red monomino (1 square) to form an 8x8 red and yellow chessboard

Tri-Rhombi



Two equilateral triangles joined together, form a rhombus with all 4 sides the same length. The 9 shapes are all different and make up of 3 rhombi. Assemble the 9 shapes to form a hexagon.

Uphill Roller



Uphill Roller

A Wheel and a Double Cone Climb Up an Inclined Plane by Themselves.

The objective is to demonstrate that the centre of gravity of objects always tends to the lowest point possible in order to reach rest.

Everybody knows that an object tends to roll down an inclined plane, with increased speed if friction or other conditions allow this, because the force of Earth gravitation is applied to the object and pulls it downwards to the lowest point possible.

Place the wheel at the lower end of the incline plane and see for yourself!

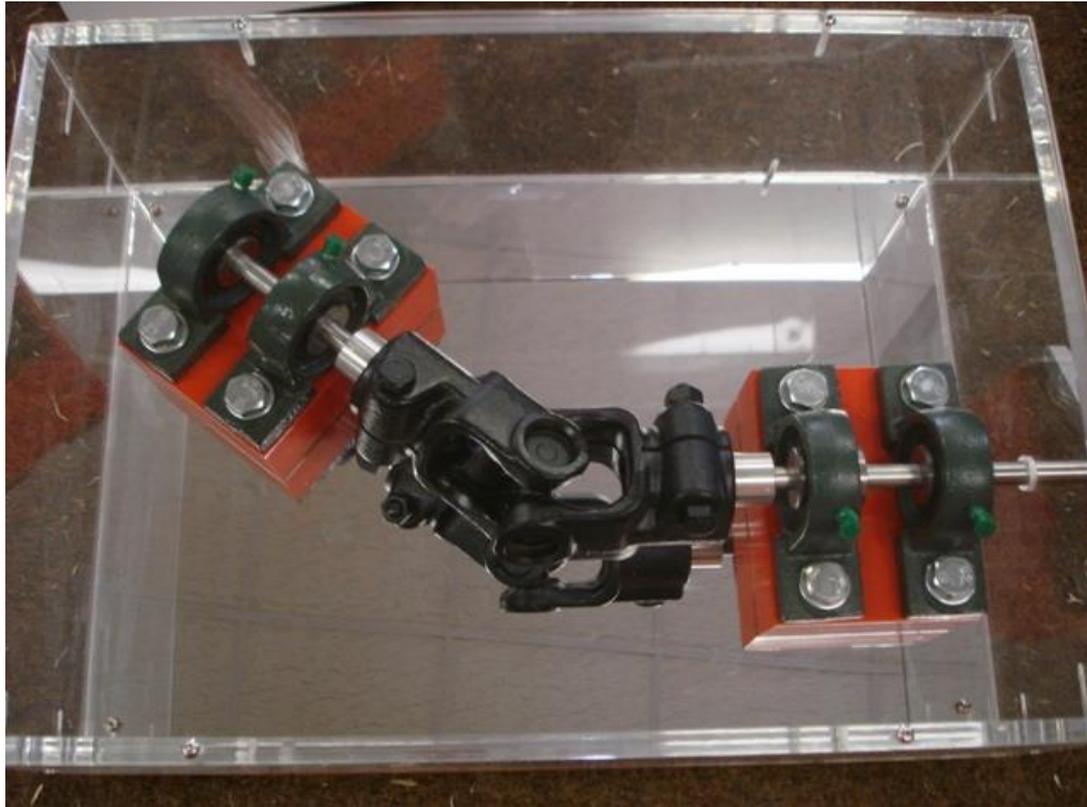
But can an object, without any external or internal source of energy, climb up an inclined plane by itself?



**START
HERE**

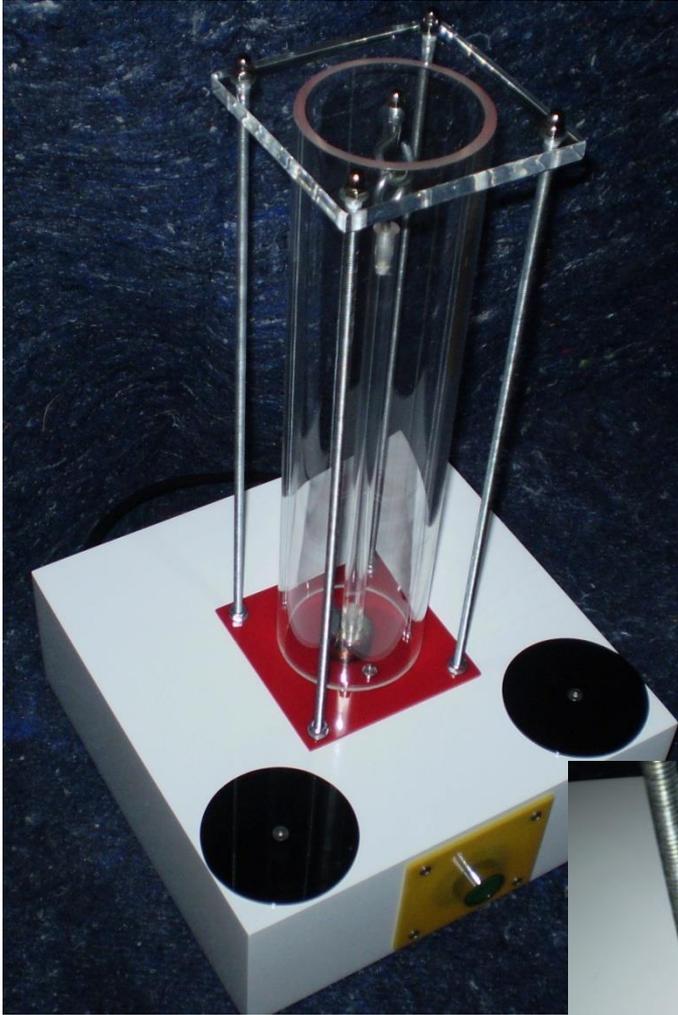

Technologies
Kobus van Dyk
0824168140

Universal Joint Demonstrator

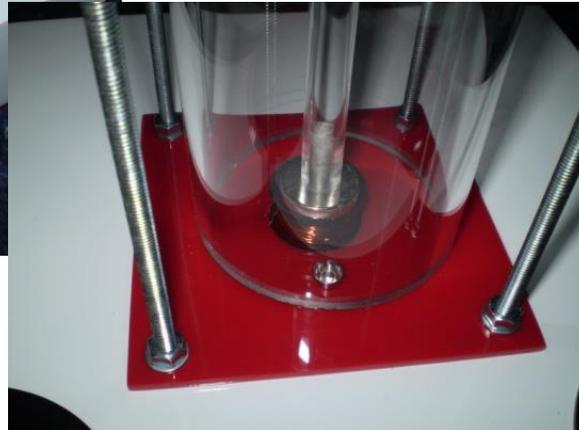


Universal joints are used in an automobile to transfer power between the engine and the wheels and account for suspension movement. Power is thus transferred in directions other than a straight line.

Vibration Monitor - Earth Moving



This exhibit detects minute movement of the earth and gives an audible indication.



Viscosity



Viscosity is a measure of the resistance of a fluid which is being deformed by some sort of stress. It can be seen as the “thickness” of a fluid. Water has a low viscosity and thus flows freely, whereas honey has a high viscosity and does not move with such fluidity as water does. The exhibit contains four acrylic tubes which contain fluids with different viscosities. Inside the fluid are glass marbles. The higher the viscosity of the fluid in the tube, the slower the movement of the marbles.

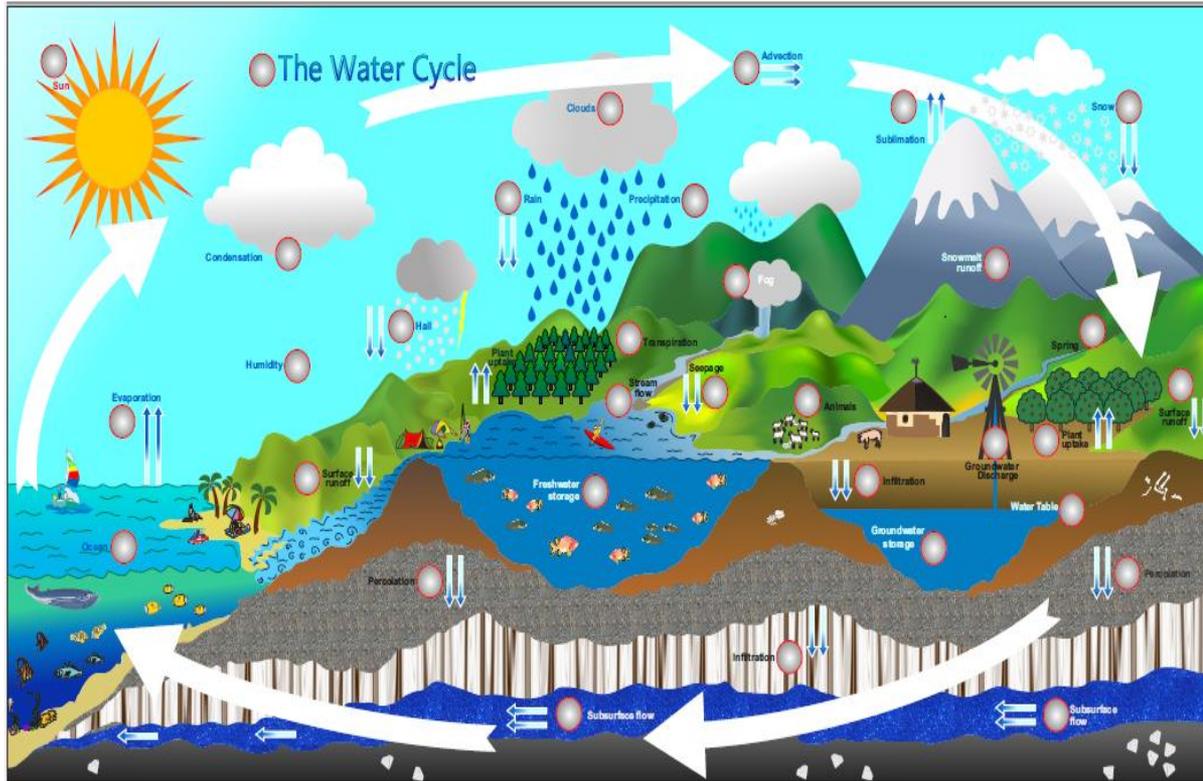


Vortex



A vortex is generated in a container filled with water the suction power of which is illustrated by a ball sucked down to the bottom.

Water Cycle



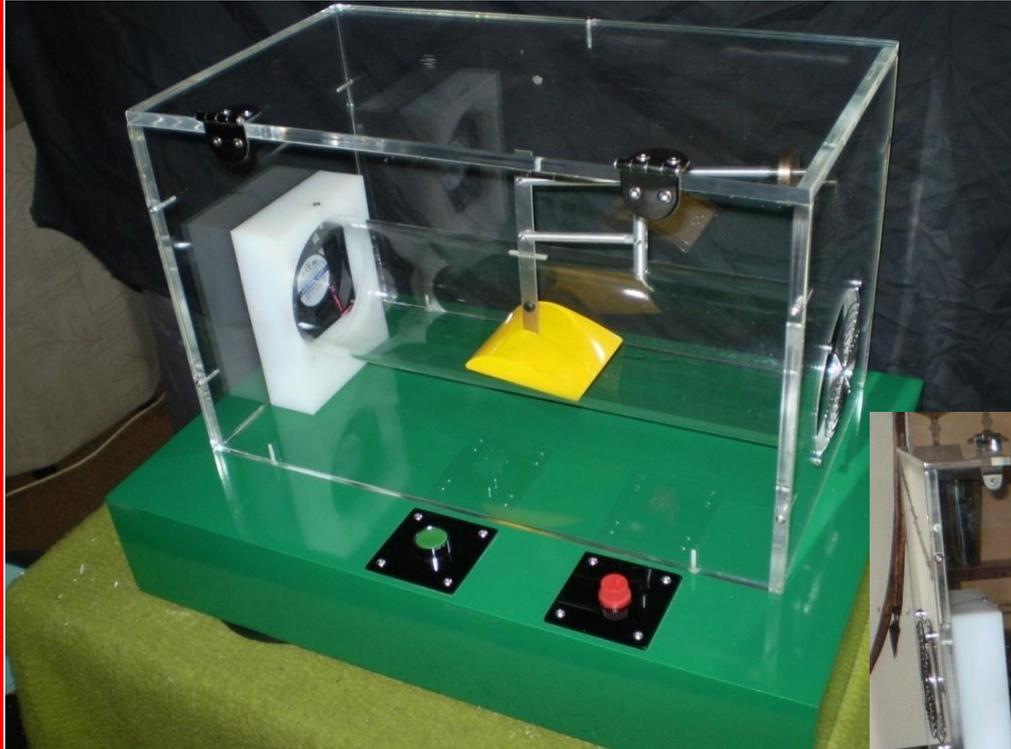
Same technology as Talking Kiosk.

Whispering Dishes

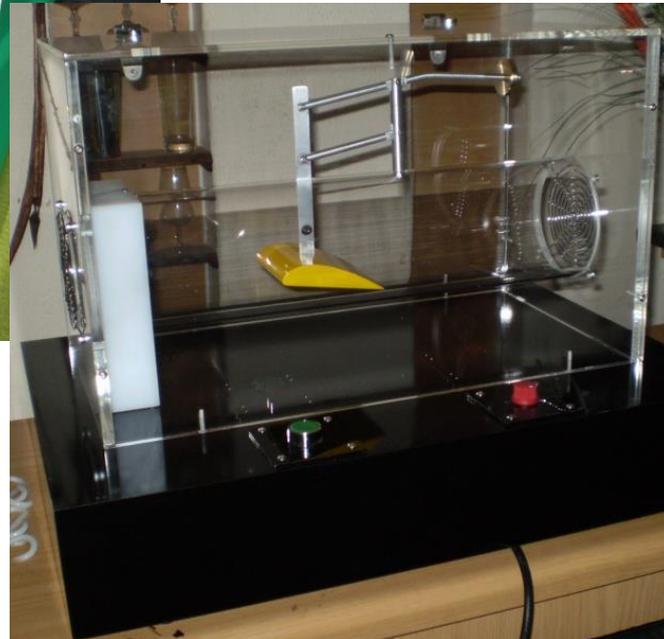
Each ring is positioned at the focal point of each Whisper Dish. When you speak into the ring, your voice reflects off your Whisper Dish and travels directly to the other Whisper Dish. There, your voice is collected and focused into your partner's ear.



Wind Tunnel with Wing



Demonstrates lift generated by
aerofoil.

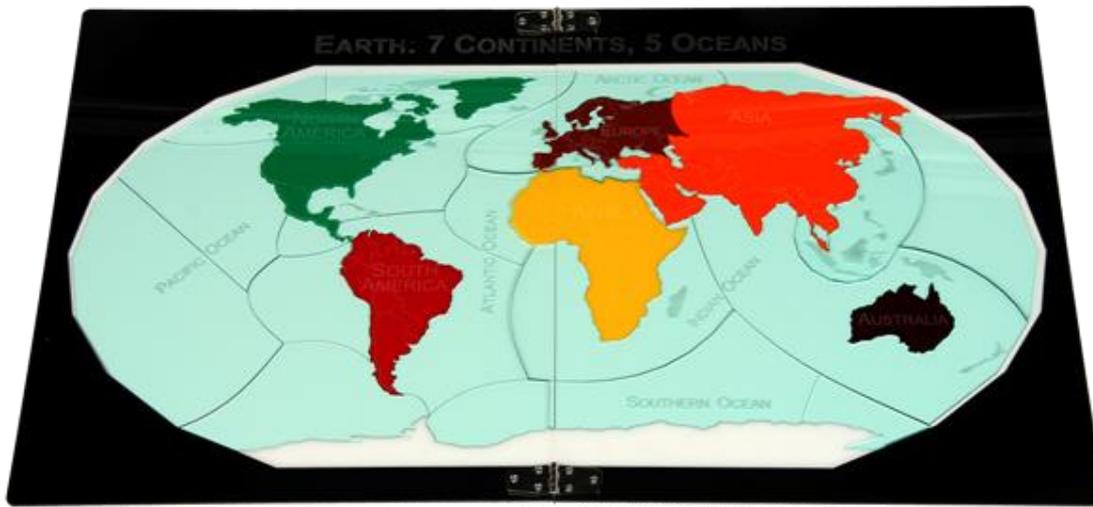


Wind Turbine Generation



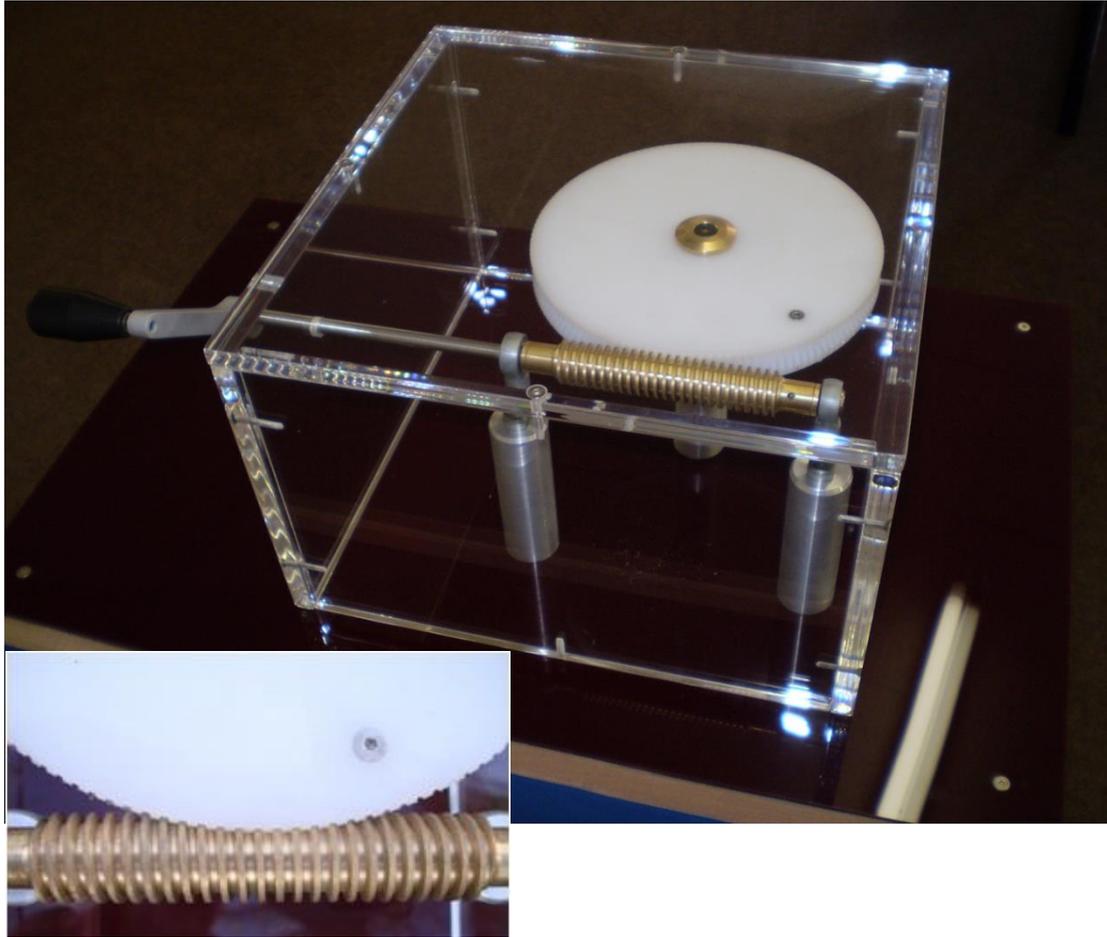
Renewable Energy - Converting Wind into Electrical Energy.

World Map Puzzle



This puzzle familiarise learners with the geographical outlay of the World. Every piece of the puzzle is a different colour and represents a continent of the world. When the puzzle is completed correctly a map of the world has been created.

Worm Gear



Demonstrates a worm gear system.



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