



**DELTA**  
EDUCATIONAL

ASSISTING NEW ZEALAND EDUCATORS

SCIENCE CATALOGUE

**2018/19**

**INTEGRITY, QUALITY,  
COST COMPETITIVE SOLUTIONS**



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**New Products:**



**Sam Labs Smart  
Construction  
Kits**

} Pg **39**



**Narika  
Genecons**

} Pg **71**



**Diji Burette**

} Pg **53**

# **ATTENTION:**

## **HOD Science, Science Technicians & Science Teachers**

Please accept with our compliments your copy of the new 2018/2019 Delta Educational Supplies Science Catalogue.

For your convenience, products herein are grouped alphabetically in distinct subject sections. This approach allows you to check out related products when searching for any specific item. In addition you will also find a comprehensive Index at the back of the catalogue.

The use of Gratnells fine storage products continues to increase. Many schools are now enjoying the numerous advantages of the Gratnells system and are putting to good use the world's most popular range of storage trays, inserts, trolleys, specialist trolleys and racking systems (see back cover of this catalogue).

For fast service and convenience in placing orders, visit our website [www.deltaed.co.nz](http://www.deltaed.co.nz). Hundreds of technicians and teachers are now enjoying the convenience of collating an order and placing it when it's convenient.

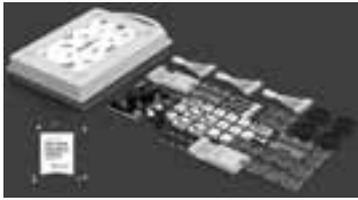
We continue to see many new school laboratories set up with equipment supplied by Delta, the bulk of which is ex-stock. Large shipments from overseas suppliers have assisted us in maintaining maximum stock levels and in supplying most of your equipment needs promptly. Having said that, back-orders sometimes occur, in which case we will send an advisement notice if the delay is expected to be significant. Do ask about alternative ex-stock products which may do the job just as well!

We trust that Delta will remain your supplier of choice by offering you good service, great prices, quality products, our 'No-Hassles' Guarantee and online shopping at our website [www.deltaed.co.nz](http://www.deltaed.co.nz). Remember that every order placed on-line at our website goes in the draw each term to win 1 Kg of chocolate! And please register for Techemail to receive notification of new products, garage sales, give-aways and the like! Send an email to [science@deltaed.co.nz](mailto:science@deltaed.co.nz) to request to be added to the Techemail list.

At Delta we still have no minimum order, no dispatch charge and no packing charge policies (excludes Chemicals). Our goal is to provide you our valued customers with the best quality product at the right price and with great service.

All the best for the year ahead from the team at Delta!

**NEW**  
Products



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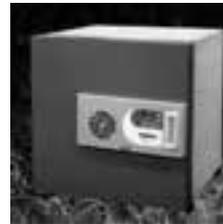
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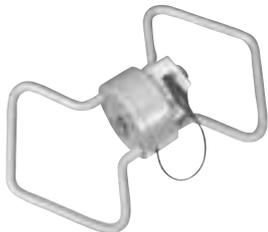
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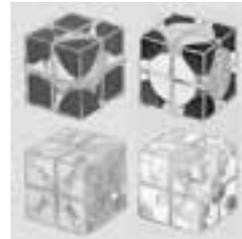
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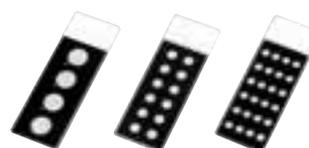
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# TERMS AND CONDITIONS:

## **TERMINOLOGY:**

“DESL” refers to Delta Educational Supplies Ltd. The “customer” refers to any person, company or organisation that DESL approves as an entity to which it sells goods. “Goods” refer to all products and services offered for sale by DESL.

## **PRICES:**

The purchase price of goods ordered from DESL is shown exclusive of GST in this catalogue. Prices herein are “each” prices unless otherwise specified and **subject to change without notification**. Prices can also be viewed at anytime at [www.deltaed.co.nz](http://www.deltaed.co.nz). Our pricing policy: If you find a better price elsewhere on an identical product, we will match that price or better if we can!

## **TITLE TO THE GOODS:**

Ownership of all items will remain the property of DESL until all amounts owing are paid in full.

## **GST:**

All goods and services in New Zealand are sold subject to a 15% Goods and Services tax.

## **PAYMENT:**

DESL account holders can place orders and have orders charged to their account. If goods are ordered on account, payment must be made in full by the 20th of the month following the date on the invoice. High value non-stock goods ordered specially for a customer may require partial or total pre-payment; such sales are final.

## **DELIVERY:**

Under normal circumstances, orders placed for delivery in New Zealand will be delivered within 3 days (excludes chemicals). Where at all possible, the customer will be advised if the item is out of stock.

## **BACK ORDERS:**

If any item ordered is out of stock or can only be partly supplied from stock, the customer will only be invoiced for the items supplied.

## **FREIGHT:**

Charged at cost on all shipments. Chemicals carry a separate freight charge as per our chemical suppliers' charges. More than one freight charge per chemical order may apply due to chemical shipping regulations and/or if more than one supplier is required to fulfill the order.

## **DISCREPANCIES & BREAKAGES:**

Any discrepancy in quantity or specification of goods supplied, or in transit damage must be notified to DESL within seven working days of the date of delivery.

## **RETURN OF GOODS & GUARANTEES:**

“No Hassles Guarantee”: We guarantee your satisfaction with all of the products purchased. If you are an account holder and for any reason you are not content with the quality of the products you receive, kindly return them in the original packaging and in original condition within seven days for replacement or credit. The goods **MUST** be returned with a copy of the invoice or packing slip. Goods returned without a copy of the packing slip, invoice or other adequate identification cannot be credited or exchanged. The cost for returning goods is at the customer's expense. Goods ordered on an indent basis especially for the customer are under no circumstances returnable unless they are found to be faulty or damaged. If any goods fail to comply with any guarantee pertaining to the goods, then DESL will repair or replace the goods. Please do not return broken glass, an image will do.

All chemical returns must be pre-approved by DESL and returned direct to the chemical supplier via an approved chemical courier; DO NOT RETURN CHEMICALS TO DESL. Chemicals that have been opened are not returnable.

## AGAR

Agar Plate Spreader (Drigalski Spatula), for Spreading sample evenly on Agar Plates, re-useable, made of glass for flaming, 180L x 35W mm.

**Cat. No. 44SPDG \$6.00**

Plain powder, AR GRADE, 500g

**Cat. No. 1110.1-500g \$138.00**

Plain powder, AR, 100g

**Cat. No. 1110.1-100g \$35.00**

Nutrient, 100g, Difco

**Cat. No. 44AN100 \$216.00**

Casein-Peptone Glucose Yeast Extract Agar for Microbiology, 500g

**Cat. No. 44AN500 \$98.00**

Nutrient, plates, convenient, economical, ready to use, pk 20

**Cat. No. 44ANP20 \$17.40**

## SHEET CULTURE MEDIA

This media can be inoculated easily by streaking, Membrane Filter Method, Direct Stamping, Swabbing, Direct Inoculation or Air Quality Test.

The benefits of using Sheet Medium are

- Ease of operation
- Improved health and safety over traditional methods.
- Smaller amount of waste & easy disposal
- Long Shelf Life
- Convenient
- Accurate
- Less culture space required (see Cat. 44MI Mini Incubator)
- Portable and ready to use
- AOAC APPROVED!



## FOR AEROBIC PLATE COUNT, 100 TESTS

This SHEET MEDIUM for AEROBIC PLATE COUNT provides an easy and accurate detection system of microorganisms! Supplied conveniently in 4 x 25 class-sized foil packs. All aerobic microorganisms grow as red coloured colonies. (A redox indicator dye generates red colour development through the microbial metabolisms.) Culture condition 35DegC, 48 hr.

**Cat. No. 44SKAPC \$168.00**

## FOR YEAST & MOULD, 100 TESTS

Yeasts & moulds are detected as red or sporangium coloured colonies. (Redox indicator dye generates red colour development.) Culture condition 25degC, 48-72 hr. Xerophilic fungi can also be grown in case of long incubation period (more than 3 days).



**Cat. No. 44SKYM \$208.00**

## MINI INCUBATOR FOR SHEET

### MEDIUM TESTING

A Mini Incubator ideal for use in all laboratory situations which require a compact yet robust design. Utilised extensively in industrial, research, food, environmental and medical industries.

Features:

1. High quality cold rolled steel, electrostatically powder coated exterior.
2. Stainless Steel inner chamber featuring rounded corners for easy cleaning.
3. Intelligent digital temperature controller with timer, alarm, temperature features.
4. Equipped with a handle for easy or transportation.
5. High temperature silicone seals.

Technical Data:

Voltage 240V

Temp Range +5 – 50DegC

Setting +/- 1DegC

Inner Chamber Size 205 (w) x 100 (d) x 148 (h)

Exterior Size 320 (w) x 300 (d) x 325 (h)

Timer Limit 0 – 9999 min



**NEW Product**

**Cat. No. 44MI \$870.00**

## BUG EYE 3D VIEWER

Totally enclosed 65 x 65mm viewer. Magnified screw top lid.



**Cat. No. 48BUG1 \$4.00**

**10+ \$3.60**

## COVER SLIPS

See Microscope Accessories

## DIALYSIS TUBING

42mm flat, 28mm diameter inflated.

Roll 30m

**Cat. No. 44DT**

**\$165.00**

Roll 5m

**Cat. No. 44DT5**

**\$38.00**

### miniDNA™ MOLECULAR MODEL, 12 LAYER



The miniDNA™ system comprises abstract shaped, colour coded parts to represent the nitrogenous bases, pentagonal sugar & pyramidal phosphate parts required to make the Double helix model of DNA. This molecular model is a great way to demonstrate the molecular structure of DNA and its unique double helix. Contents: 6 Thymine (orange), 6 Adenine (blue), 6 Guanine (green),

6 Cytosine (yellow), 24 Deoxyribose (red) and 24 Phosphate (purple).

The miniDNA molecular model is supplied with assembly instructions and its own stand. Packed in a plastic box.

Height 24 cm; diameter 11 cm

**Cat. No. 51MDNA \$66.00**

### ADVANCED miniDNA™ MOLECULAR



#### MODEL, 22 LAYER

This right handed double helix self assembly molecular model kit with 22 (2 turns) base pairs can be used to model DNA REPLICATION and complementary base pairing. The DNA molecular model kit contains colour coded parts to represent the nitrogenous bases, pentose sugars and phosphate components that make up DNA.

Special features of the miniDNA molecular model:

- Connected by 2 and 3 Hydrogen bonds for Thymine/ Adenine & Cytosine/Guanine respectively
- Clearly demonstrates the major and minor grooves
- Differently sized pyrimidines to purines

Contents: 11 Thymine (orange), 11 Adenine (blue), 11 Guanine (green), 11 Cytosine (yellow), 44 Deoxyribose (red), 44 Phosphate (purple).

Demonstrate the structure of the DNA double helix with this colour coded molecular model kit. Complete with instructions and stand.

**Cat. No. 51AMDNA \$125.00**



#### ADVANCED miniDNA 12 BASE RNA

Easily assembled, this single strand molecule consists of the 4 bases, as in DNA, and Uracil. This DNA molecular kit contains 12 bases, equivalent to

4 codons in a single strand model of messenger RNA as well as 2 "clover leaf" shaped Transfer RNA parts and 2 amino-acid parts. Together with the 12 layer Advanced miniDNA kit it can be used to model the creation of RNA by TRANSCRIPTION. Furthermore, it provides hands-on investigation into protein synthesis known as TRANSLATION.

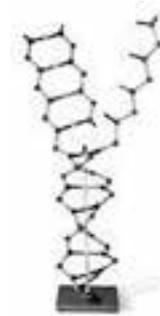
The Advanced miniDNA molecular model includes:

- 3 Uracil (light blue)
- 3 Adenine (blue)
- 3 Guanine (green)
- 3 Cytosine (yellow)
- 12 Ribose (red)
- 12 Phosphate (purple)



Demonstrate the molecular structure and function of DNA and RNA.

**Cat. No. 51DNA \$48.30**



#### DNA - RNA MODEL

Shows double helix and how molecules split at the centre of the base pairs. 28 coloured tubes (Guanine red, Cytosine green, Thymine blue, Adenine grey)

**Cat. No. 51DNA \$39.00**

### DISSECTING EQUIPMENT

#### SCALPEL HANDLE

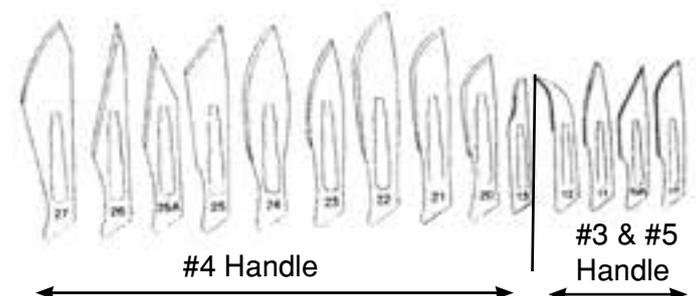
- |                    |                       |               |
|--------------------|-----------------------|---------------|
| Stainless Steel #3 | <b>Cat. No. 48SH3</b> | <b>\$3.10</b> |
| Stainless Steel #4 | <b>Cat. No. 48SH4</b> | <b>\$3.10</b> |



#### BLADE, SCALPEL

- |      |        |                         |                |
|------|--------|-------------------------|----------------|
| # 10 | Pk 10  | <b>Cat. No. 48BS10</b>  | <b>\$3.20</b>  |
| # 10 | Pk 100 | <b>Cat. No. 48BS100</b> | <b>\$28.00</b> |
| # 11 | Pk 10  | <b>Cat. No. 48BS11</b>  | <b>\$3.20</b>  |
| # 11 | Pk 100 | <b>Cat. No. 48BS110</b> | <b>\$28.00</b> |
| # 22 | Pk 10  | <b>Cat. No. 48BS22</b>  | <b>\$3.20</b>  |
| # 22 | Pk 100 | <b>Cat. No. 48BS220</b> | <b>\$28.00</b> |
| # 23 | Pk 10  | <b>Cat. No. 48BS23</b>  | <b>\$3.20</b>  |
| # 23 | Pk 100 | <b>Cat. No. 48BS230</b> | <b>\$28.00</b> |
| # 24 | Pk 10  | <b>Cat. No. 48BS24</b>  | <b>\$3.20</b>  |
| # 24 | Pk 100 | <b>Cat. No. 48BS240</b> | <b>\$28.00</b> |

Other size blades available.





## DISSECTING BOARD

With cork top 425 x 300 x 10mm



Cat. No. 48BDC **\$26.00**

## DISSECTING UNDERPADS

These inexpensive Underpads offer light protection from spills and fluids with three layers of absorbent tissue, a moisture-proof base and perimeters sealed on four sides. They fit comfortably underneath all of our Dissecting trays on this page (48TTD, 48TDA & 48BDC). 43 X 60cm.

Cat. No. 48DU 1-19 **\$0.44 each**  
 50+ **\$0.35 each**  
 Box/300 **\$94.05 (\$0.31ea)**

## FORCEPS, THUMB

Straight, 130mm, blunt point **Cat. No. 48FSB \$2.95**  
 Straight, 130mm, fine point **Cat. No. 48FSF \$3.20**  
 Straight, 145mm, fine point, plastic **Cat. No. 48FSP \$1.90**



## FOSSIL SETS

### ASEP Fossil collection

This collection of 13 fossils contains demonstration specimens of animal phyla and plants from the Palaeozoic, Mesozoic and Cenozoic periods. The collection comes complete with a descriptive key sheet and geological time chart. **Cat. No. 48F13 \$95.50**

### General Palaeontological Collection

This comprehensive collection of 30 fossils contains demonstration specimens of animal phyla and plants from the Paleozoic, Mesozoic, and Cenozoic periods. The collection comes complete with a descriptive key sheet.

**Cat. No. 48F25 \$290.00**

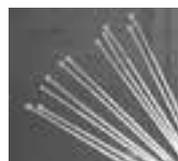
## INCUBATORS

These general purpose laboratory natural convection incubators are ideal for most microbiology culture work. PID temperature control provides automatic compensation after load changes, setting changes or door openings for excellent accuracy. Natural convection heat distribution combines with adjustable air vents to provide excellent temperature uniformity. Timer mode of 1-999 hours or 1-999 minutes. Double wall construction, fiberglass insulation provided between inner and outer walls and silicon rubber door seals reduce heat loss and power drain. Stainless steel interior chamber and perforated shelves are corrosion resistant, durable and easy to clean. Powder coated exterior is attractive, durable and corrosion resistant. 1 year warranty. (Freight charges apply).



Cat. No.	41INC30	41INC50	41INC80	41INC150
Dimensions: External	500 x 425 x 420 mm	695 x 480 x 475 mm	770 x 522 x 560 mm	795 x 725 x 620 mm
(H x W x D) Internal	315 x 325 x 310mm	390 x 380 x 365 mm	463 x 420 x 450 mm	500 x 625 x 510 mm
Capacity	30 litre	50 litre	80 litre	150 litre
Shelves	2 perforated SS			
Weight	22 kg	27 kg	35 kg	72 kg
Packed Dimensions	695 x 510 x 560 mm	775 x 570 x 570 mm	845 x 620 x 620 mm	990 x 800 x 800 mm
Control System	Microprocessor-based digital system			
Visual Alarm Indicator	10 Degrees above set point. Safety fuse.			
Power Requirements	220VAC/50Hz, 300W	220VAC/50Hz, 500W	220VAC/50Hz, 700W	220VAC/50Hz, 800W
Price	<b>\$1,764.00</b>	<b>\$1,855.00</b>	<b>\$3,078.00</b>	<b>\$4,252.00</b>

## INNOCULATING LOOPS



Disposable plastic.  
Packs of 25

Cat. No. 48LD **\$4.95**



Inoculating Loop Holder  
w/chuck (Includes one Nichrome wire  
loop) **Cat. No. 44ILH \$7.50**

Inoculating Loop Nichrome (pk 5)  
**Cat. No. 44IL \$6.75**

**BREATH VOLUME KIT**

Students measure tidal volume and respiratory minute volume with the plastic bag and mouthpiece. Kit will also aid in demonstrating the effects of conditioning. Complete instruction guide included.

Cat. No. 53BVK **\$55.00**

**LUNG VOLUME KIT**

Lung capacity is a significant indicator of physical fitness. The lung volume kit gives students the opportunity to understand their own physiology more thoroughly. Kit includes: a durable plastic bag calibrated to

6 litres, mouthpiece and mouthpiece holder.

Set of 4 Complete Kits **Cat. No. 53LVK \$76.00**

**Spares:**

Set of 4 Mouthpiece Holders **Cat. No. 53LVH \$12.00**

Set of 4 Lung Volume Bags **Cat. No. 53LVB \$63.00**

Mouthpieces only, pk/8 **Cat. No. 53LVM \$16.60**

**WATERPROOF MULTI-PARAMETER WATER TESTERS**

Introducing the Eutech Testr 35 Series: With the new Eutech Testr 35 series, multi-parameter measurement is a breeze. Convenient, fast and simple, all you need to do is dip, measure and scan through up to five parameters with the press of a button. No complicated operating procedures; no need to change sensors for different parameter measurement. Depending on the model, the user-replaceable sensor measures pH, Conductivity, TDS, Salinity & Temperature. There are three models:

**PCSTEST35**

Waterproof PCSTestr 35 pH/Conductivity/TDS/Salinity/Temp Tester with ATC; (pH: 0.01pH resolution; Cond: 0 - 200.0  $\mu$ S/cm; 0 - 2000  $\mu$ S/cm; 0-20.00 mS/cm; TDS: 0-100.0 ppm; 100-1000 ppm; 1-10.00 ppt; Sal: 0-99.9 ppm; 100-999 ppm; 1.00-10.00 ppt; 0-1.00%).

Cat. No. 44PCS35 **\$412.00**

**PCTEST35**

Waterproof PCTestr 35 pH/Conductivity/Temp Tester with ATC; (0.1 pH resolution; 0-1999  $\mu$ S/cm; 2.0-20.00 mS/cm).

Cat. No. 44PC35 **\$345.00**

**PTTEST 35**

Waterproof PTTestr 35 pH/TDS/Temp Tester with ATC; (0.1 pH resolution; 0-999ppm; 1-10.00 ppt).

Cat. No. 44PT35 **\$348.00**

**Replacement Sensor**

PCSENSOR Replacement pH/Conductivity/Temp Sensor for PCSTestr 35, PCTestr 35, PTTestr 35.

Cat. No. 44PCS **\$180.00**

**CONDUCTIVITY CALIBRATION SOLUTIONS**

Conductivity Calibration Solution 84  $\mu$ S/cm KCl

Cat. No. 44PCS84 **\$55.50**

Conductivity Calibration Solution 1413  $\mu$ S/cm KCl

Cat. No. 44PCS14 **\$55.50**

Conductivity Calibration Solution 12.88 mS/cm KCl

Cat. No. 44PCSCS **\$55.50**

**pH CALIBRATION SOLUTIONS**

Calibration Buffer pH 4, 480ml Colour coded Red

Cat. No. 44PCS4 **\$51.00**

Calibration Buffer pH 7, 480ml Colour coded Yellow

Cat. No. 44PCS7 **\$51.00**

Calibration Buffer pH 10, 480ml Colour coded Blue

Cat. No. 44PCS10 **\$51.00**

Calibration Buffers (Pack), one each of pH 4,7,10 480ml, Colour-coded

Cat. No. 44PCS4710 **\$144.00**

**ARE YOU GETTING TECHEMAIL?**

*If you are not receiving the Delta Science 'Techemail' you could be missing out!*

*Techemail keeps you up to date on new products, specials, promotions, clearance sales and the like. These are available only to subscribers, so if you are not receiving Delta's Techemail, just send an email to [science@deltaed.co.nz](mailto:science@deltaed.co.nz)*

*with the words*

**SUBSCRIBE TECHEMAIL**

*and we shall add that address to our mail list. Similarly, you may send*

**'UNSUBSCRIBE'**

*to be removed from the list anytime.*

# MICROSCOPY

## MICROSCOPES, COMPOUND BIOLOGICAL

A full range of microscopes is available, some of which are featured here. **Ask us about special class set prices!**

### Monocular Senior Digital

This new digital monocular microscope can be used as a normal microscope and also as a computerised Digital microscope. Inclined at 45°, 360° rotatable. Achromatic Objectives, 4x, 10x, 40x, 100x. Eyepiece WF10x, Mechanical Stage, Abbe Condenser with Iris Diaphragm, LED Illumination. 1.3M pixel. Software included.

Cat. No. 44MMSD **\$865.00**



### Senior Student Monocular Microscope Delta Model BM117

This quality microscope is our finest senior microscope and features the following:

Die-cast metal Body with 3W LED illumination, Backward Quadruple revolving nosepiece, Monocular Head 30° inclined, 360° rotatable.

Coaxial Coarse & Fine Adjustment System, Range 24 mm, Fine Division 0.004 mm, with Safety auto-focus stop unit, Abbe Condenser N.A. 1.2 with Iris Diaphragm & Filter, Inbuilt power supply, Double Layers Mechanical Stage, 132 x 142mm, Travel area 75 x 40mm, Dust cover, blue & green filter, and instruction manual included, Eyepiece WF 10x/18 Widefield, DIN Achromat Objectives: 4x/0.10, 10x/0.25, 40x/0.65 spring loaded.

Cat. No. 44MM117 **\$598.00**



### Monocular Junior, LED Illuminator

The ideal economical microscope for teaching Junior Science and Introductory Microscopy, High quality glass optics and long-life LED illumination.

#### Features:

- Monocular eyepiece tube
- built-in LED light
- 4x, 10x, 40x Achromat objectives
- Lockable widefield 10x WF eyepiece with pointer
- Spring-loaded stage clips for easy slide placement
- Rotary disc diaphragm apertures
- Rack and pinion stage with bilateral single course focus knob
- Die-cast rugged metal housing
- Adjustable stage stop (prevents damage to 40x lens)
- CE certified
- 40X to 400X magnification
- Power 240V AC adapter or 4 x AA batteries

Cat. No. 44MMJA2 **\$275.00**



### Monocular Junior / Senior

Monocular Microscope for teaching Junior and Senior microscopy. Slightly larger than the Junior Cat. 44MMJA2 and with an additional fine focus knob and iris diaphragm (to enhance detail at 400x magnification). Features: Monocular eyepiece tube, built-in 20W tungsten fused lamp, 4x, 10x, 40x Achromat objectives, Lockable widefield 10x eyepiece with pointer, Spring-loaded stage clips for easy slide placement, Iris diaphragm, Rack and pinion stage with bilateral coarse & fine focus knob, Die-cast rugged metal housing, Adjustable stage stop (prevents damage to 40x lens), CE certified, 40X to 400X magnification.

Cat. No. 44MMJAF **\$360.00**



## MICROSCOPE- STEREOSCOPIC

### Stereoscopic Model 2L

Rotatable objectives with 20x / 40x magnification, comfortable 45° inclined viewing, widefield 10x eyepieces, X2 eyecups and dust cover. Episcopic and diascopic illumination.

Cat. No. 44MS2L **\$430.00**



## MICROSCOPE ACCESSORIES

### COVER SLIPS, for microscope slides

22mm sq. Pk/100 Cat. No. 44CS22100 **\$5.00**

22x40mm pack/100 Cat. No. 44CS2240 **\$13.25**

### Eyepiece Micrometer

For WF10X/18mm eyepieces, graduated scale, 1mm divided into 100 divisions. A Stage micrometer is required to calibrate the divisions on this scale each time that the objective magnification is changed.

Cat. No. 44MLEM **\$166.80**

### Stage Micrometer

Micrometric slide 26x76 mm, range 1 mm, div. 0.01 mm

Cat. No. 44MLSM **\$130.70**

### DUST COVER

Protect your microscope's optics

Cat. No. 44MDC **\$9.50**

### IMMERSION OIL

30ml

Cat. No. 480I **\$32.00**

### MICROSCOPE LAMP

A free-standing, well-ventilated and heat-resistant housing on an adjustable stand. Blue tinted front window provides light reduced in red content to assist with providing better images of slides. Ideal for class sets which only have mirrors.

240V/25W

Cat. No. 44ML **\$42.00**



## MICROSCOPE SLIDE SETS PREPARED

Introductory Microscopy 12 slides

Cat. No. 44MSS885 **\$96.60**

Basic Biology, 20 slides

Cat. No. 44MSS899 **\$108.00**

Basic Botony, Algae to Angiosperms, 20 slides

Cat. No. 44MSS886 **\$99.50**

Basic Zoology, 20 slides

Cat. No. 44MSS887 **\$116.00**

Animal Tissues, Nervous System, 10 slides

Cat. No. 44MSSAT5 **\$98.00**

Animal Tissues, Circulatory System, 10 slides

Cat. No. 44MSSAT6 **\$72.00**

Animal Tissues, Muscle & Bone, 6 slides

Cat. No. 44MSSAT7 **\$3500**

Animal Tissues, Glands & Endocrine, 10 slides

Cat. No. 44MSSAT8 **\$95.00**

Bacterial Types & Cell Division, 10 slides

Cat. No. 44MSS890 **\$108.00**

Insect Anatomy, 20 Slides

Cat. No. 44MSS889 **\$124.00**

An extensive range of prepared, high quality slides is available covering the areas of histology, zoology, botany, parasitology, pathogenic bacteria, cytology, embryology, ecology and environment. SEE THE DELTA WEBSITE or contact us TOLL FREE 0508-654 321 for further details.

## SLIDES

Plain pack/50, washed (Made from optically flat and corrosion-resistant clear glass, ground edges, 75 x 25 x 1.35mm)

Sail Brand Cat. No. 44MSPW **\$3.60**

Single Cavity pack/50 Cat. No. 44MSC **\$36.30**

Double Cavity pack/50 Cat. No. 44MSDC **\$53.00**

## HYDROPHOBIC SLIDES

Conveniently view LIVE microscopic aquatic life forms using the recessed wells of these water-repellent slides. By simply applying a drop to each well, aquatic organisms can be observed easily under a microscope. Slides are 76 x 26mm and supplied as a pack of 5.



X4 10mm holes in each slide Cat. No. 44MSH4 **\$26.00**

X12 5mm holes in each slide Cat. No. 44MSH12 **\$26.00**

X24 4mm holes in each slide Cat. No. 44MSH24 **\$26.00**

## SLIDE STORAGE BOX - PLASTIC

Protect your prepared slides. Index card included.

Holds 25 slides Cat. No. 48SB919 **\$8.00**

Holds 50 slides Cat. No. 48SB50 **\$10.00**

Holds 100 slides Cat. No. 48SB100 **\$12.00**

## μHANDY - Transmitted Light Microscope for Smart Devices



**NEW Product**

μHandy Educational is a Bioscience tool designed for anyone interested in exploring the microscopic world. It turns smartphones and tablets into mobile microscopes! With μHandy Educational, anyone can now explore the micro-world with ease. The μHandy Educational replaces the combination of a traditional microscope, CCD camera and computer. It consists of:

1. One μHandy mobile microscope
2. One sample-collecting toolkit (μHandy Slide and Sample Stickers)
3. One sample-collecting book (to collect and protect the Sample Stickers)

μHandy is also useful on field trips or for teacher demonstrations of slides to the class via their mobile devices with the optional μHandy Standard Slide Holder (Cat. 44UHSH). Supports most smartphones/tablets and can interface with Multimedia Projectors and Apple TV's for the immediate demonstration of a slide to students. With the re-adhering stickers, samples can be collected anywhere. Simply attach the objects of interest onto the light and safe μHandy slide.

Optical features:

Optical lens: Single lens.

Resolution: Up to 1um (500 line pair/mm) Depends on smart-devices, e.g., iPhone 5s for 1.5um.

Field of view (FOV): 1mm in diameter.

Magnification rate: FOV comparable to 200X magnification on a microscope. Screen magnification rate depends on smart-devices, e.g., Apple iPad mini is in the range of 65X-300X (Zoom in/out).

Full Kit includes:

- μHandy Portable Transmitted Light Stage with Light Source
- Optical Lens
- Universal Lens Clip for Smart Devices
- μHandy Magnetic Slide
- Collecting Album with Instructions, x2 Sample Stickers, x108 Specimen Stickers.

(Limited quantities of optional Cases are available to perfectly attach and centre the Optical Lens for iPhone 6, 6 Plus, iPad 5/5S, mini & Air. Please inquire.)

Cat. No. 44UH **\$195.00**

3+ **\$180.20**

Optional μHandy Standard Slide Holder

Cat. No. 44UHSH **\$23.00**



# Video Flex<sup>®</sup>

## MEGAPIXEL DIGITAL VISION VIEWER 7890UM

This is the Ken-A-Vision highest resolution digital desktop colour video camera for direct connection to a computer or laptop via a fast USB 2.0 interface. The camera has a high resolution of 1280 x 960 SXGA and a solid base with a 51cm long gooseneck. The ergonomically designed swivel head houses a CMOS camera with a 6 mm glass lens. It can be focused from 26 mm to infinity. The camera can easily be connected to the eyepiece of a microscope, or focused on a scientific experiment, graphic materials, moving objects or a teacher's demonstration. The pictures and videos are displayed and edited on a PC with the help of user-friendly Applied Vision™ Software which is supplied with the camera. The 1.5 m USB connection cable is fixed to the camera. The 7890UM Megapixel Digital Vision Viewer™ does not need a separate power supply since the computer supplies the power needed via the USB interface.

- Weight: 1.82 kg
- Base: Solid
- Height: Approx. 62.2 cm
- Gooseneck: 51 cm
- Head Type: 90 degree fixed angle
- Lens: 6mm Glass
- Focus: 1/4 turn Quick Focus™
- Focal Distance: 26 mm to Infinity
- Light Sensitivity: 2.0 Lux
- Resolution: 1280 x 960 SXGA
- Magnification: 30:1
- Output / Interface: Digital / USB 2.0 / USB 1.1
- Eyepiece Adapters: 28 mm
- Cable: Pre attached 5'/1.5 m USB
- Power Supply: Via USB

Cat. No. 44VF7890UM

**\$925.00**

(A full range of other Videoflex models & prices are available; please ask.)

## MODELS

All models designated '3B' are made of high quality plastic and hand-painted true to detail. Developed and modeled in Germany. Refer 3B website [www.3bscientific.com](http://www.3bscientific.com) for the complete product line.



### AIDS VIRUS

Model of the AIDS virus showing structure and form.

Cat.No. 51AV

**\$68.00**



### HUMAN SKELETON, 3B

Quality skeleton by 3B Germany, made of unbreakable plastic and mounted in an upright position on a metal stand with castors. Each bone is cast individually in natural colour with all details of anatomy represented. Wherever possible there is natural movement in the joints. Legs and arms are removable as well as the skull. Mandible hinged with springs, calvarium sectioned to permit study of the cranial cavity. Optional Dust Cover highly recommended.

Cat. No. 51MSA10

**\$580.00**



### DUST COVER FOR SKELETON, 3B

Protect your skeleton with this heavy-duty protective cover. Suitable for all full size skeletons and stand versions. Black with transparent window.

Cat. No. 51DCS

**\$65.00**

### MINI SKELETON – 'SHORTY'

Top of the range mini human skeleton. All of the details and structures are anatomically true even at half natural size (80 cm). This mini skeleton can be taken off of its base when required. The skull can be removed and disassembled into three parts (skullcap, base of skull, mandible). The arms and legs are removable. The hip joints are specially mounted so their natural rotation can be demonstrated.



Cat. No. 51MSA18

**\$365.00**



### SKULL, CLASSIC, 3 PART, 3B

For basic anatomical studies, hand-made from hard unbreakable plastic.

Cat. No. 51MSA20

**\$158.00**

### ANTHROPOLOGICAL SKULLS AUSTRALOPITHECUS AFARENSIS SKULL

Australopithecus afarensis is the best represented early hominid with approximately 100 fossils representing the species. The australopithecines are only known from Africa; none have ever been found in Europe or Asia.



Cat. No. 51SAA

**\$440.00**

## SKULL OLDOWAY H5 AUSTRALOPITHECUS BOISEI

This KNM-ER 406, Omo L. 7a-125 skull model is a high-quality casting of a reconstruction of the Kalvarium skull (KNM-ER 406) with a partial mandible (Omo L. 7a-125). The Kalvarium skull is assumed to be approximately 1.7 million years old and was discovered at Lake Rudolph (now called Lake Turkana) in 1970.



Cat. No. 51SOH5 **\$292.00**

## SKULL BROKEN HILL / KABWE HOMO RHODESIENSIS

The Broken Hill human skull model is an accurate casting of a reconstruction from an original specimen that was discovered in an iron ore working at Broken Hill, in north west Rhodesia (modern-day Kabwe in Zambia).



Cat. No. 51SBH **\$280.00**

## SKULL CRO-MAGNON

This anthropological skull model is a wonderful casting of a reconstruction of an early hominid called Cro-Magnon man. The age of the original Cro-Magnon man specimen is dated to be 20,000 to 30,000 years old.



Cat. No. 51SCM **\$280.00**

## SKULL SINANTHROPUS (H. ERECTUS PEKINENSIS)

This Sinanthropus skull replica is an accurate casting of a Sinanthropus skull reconstructed by Weinert and modelled after drawings by Black and Weidenreich after all the original bone specimens had been lost.



Cat. No. 51SHEP **\$292.00**

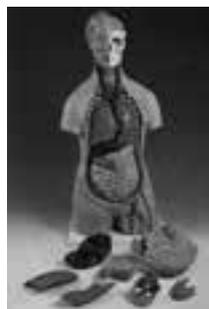
## SKULL HOMO (SAPIENS) NEANDERTHALENSIS

Cast from a reconstruction of the La Chapelle-aux-Saints skull, this anthropological model skull is an accurate copy of one belonging to a 50-55 year old male Neanderthal from ancient Europe of the species Homo (sapiens) neanderthalensis.



Cat. No. 51SHSN **\$292.00**

## TORSO WITH HEAD, 3B



Economy torso complete with removable head, skull and brain exposed on one side. Two lungs, heart with junctions to the major vessels, front heart wall removable (2 part), stomach, liver with gall bladder, whole intestine system with pancreas and removable secum flap (2 part). Sexless, 12 parts.

Cat. No. 51B9 **\$780.00**

## TORSO 20 PART, 3B

Removable head (skull and brain exposed on one side, removable eyeball with optic nerve), female breast covering (with skin musculature, mammary gland and rib junctions), 2 lungs, heart (2-part), stomach, liver with gall bladder, whole intestine system with pancreas and removable cecum flap, front kidney half, female genital insert with removable embryo (3-part) male genital insert with removable penis (4-part)



Parts numbered

Key Card: L/G/E/F

Dimensions: 87 x 38 x 25cm

Weight 7.0kg

Cat. No. 51B32 **\$1,375.00**

## MINI TORSO, ECONOMY

This easy to use 12 piece model can be disassembled into head (two halves, one with removable brain), 2 lungs, heart (2-part), stomach, liver with gall bladder and whole intestinal system. Parts are in colour, numbered and listed in English. Height 500mm.



### A Mini-Torso of Maxi Quality!

Cat. No. 51TM **\$275.00**

## BRAIN MODELS

### BRAIN 2 PART, 3B

A medially divided brain, delivered on removable base, plastic.

Key card: L/G/E/F

Dimensions: 14 x 16 x 14cm



Cat. No. 51MBC15 **\$185.00**



### HUMAN BRAIN, 2-PART

Life-sized 2-part sectioned model of the human brain on removable base with key card.

Cat. No. 51B2 **\$32.00**

**HUMAN BRAIN, 4-PART**



Life-sized detailed 4-part sectioned model of the human brain. Right hemisphere has cerebellum and stem with occipital lobe. With key card.

Cat. No. 51B4 **\$60.00**

**DIGESTO-RAMA®**



Hands-on activity makes learning about the digestive system fun! Contains two plastic replicas of the digestive tract plus an activity guide written especially for kids. Younger students learn basic anatomical information, while older students expand on the activities.

Cat. No. 53DOR **\$34.00**

**EAR, 3B  
STANDARD LEFT EAR 3 TIMES FULL SIZE,  
4 PART**

Representation of outer, middle and inner ear. Removable eardrum with malleus and incus as well as labyrinth with stapes, cochlea and vestibulocochlear nerve (2-part). On base.



Dimensions: 34 x 16 x 19cm

Cat. No. 51MEA **\$188.00**

**EYE, 3B  
3 TIMES FULL SIZE, 6 PART**

This model dissects into:

- both halves of the sclera with cornea and eye muscle attachments
- both halves of choroid with iris and retina
- lens and
- vitreous humour



On base. Dimensions: 9 x 9 x 15cm

Cat. No. 51MEF15 **\$126.00**

**EYE on base of bony orbit, 3b  
5 TIMES FULL-SIZE, 7 PART**

Removable parts of this large anatomical human eye model include:

- Upper half of the sclera with cornea and eye muscle attachments
- Both halves of choroid with iris and retina
- Lens
- Vitreous humour

This larger eye model on base of bony orbit is great for studying the anatomy of the human eye.

Cat. No. 51MEF11 **\$395.00**



**HEART, 3b 2 PART**

The front heart wall is removable to view the chambers. On removable stand.



Cat. No. 51MH **\$96.50**

**KIDNEY MODEL, 3b  
KIDNEY WITH ADRENAL  
GLAND,  
2 PART**

This model shows kidney with adrenal gland as well as renal and adrenal vessels and upper portion of ureter. Front half of kidney is removable to show cortex medulla and vessels as well as renal pelvis.



On removable stand. Cat. No. 51MK12 **\$148.00**

**LUNG ACTIVITY MODEL**

A firsthand view of how the lungs work! This simple, yet effective apparatus consists of two sacs which represent the lungs, a rubber membrane which serves as the diaphragm and a clear plastic enclosure which models the chest cavity. By making the diaphragm relax and contract the students can see how the lungs are emptied and filled with air.



Size: 20x20cm (DxH) Cat. No. 51LAM **\$98.00**

Spare Diaphragm for Lung Activity Model

Cat. No. 51LAMD **\$18.00**

**TOOTH, 3B**



This 2-part lower twin-root molar has a longitudinal section. The Lower Twin-Root Molar displays cavities. The tooth is an accurate representation of adult dentition. 23-29 cm high.

Cat. No. 51TLC **\$178.00**

**MODELS -  
FUNCTIONAL JOINTS, 3B**

Provide a graphic demonstration of the anatomy and mechanics of the joint allowing better teacher-student understanding. Bones are made of unbreakable plastic. (unless otherwise noted)

**ELBOW JOINT** Cat. No. 51FEJ **\$125.00**

**HIP JOINT** Cat. No. 51HJ **\$125.00**

**KNEE JOINT** Cat. No. 51FKJ **\$125.00**

**SHOULDER JOINT** Cat. No. 51FSJ **\$125.00**



ELBOW

HIP

KNEE

SHOULDER

## MODELS - MAMMALIAN SKULLS, 3B

### CAT (*Felis catus*) - A real cat skull



Flexibly mounted.

Cat. No. 51SC020 **\$174.00**

### DOG (*Canis domesticus*)



Flexibly mounted.

Cat. No. 51SD **\$240.00**

### GORILLA (*Gorilla gorilla*)



Adult male, cast from nature with movable lower jaw. Unbreakable plastic.

Cat. No. 51VP762 **\$466.00**

### CHIMPANZEE (*Pan Troglodytes*)



Adult female, cast from Goethe University Collection.

Cat. No. 51VP760 **\$375.00**

### SHEEP (*Ovis aries*)



Adult, cast from nature with removable lower jaw. Unbreakable plastic.

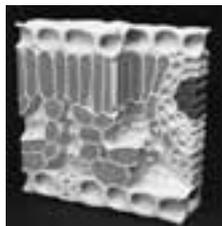
Cat. No. 51SS011 **\$398.00**

## MODELS - BONTANY

### BLOCK MODEL LEAF STRUCTURE, 3B

Shows histological structure of a beech leaf (*fagus silvatica*) magnified 1500x.

350 x 370 x 110mm; 2kg



Cat. No. 51BMLS **\$365.00**

### CHERRY BLOSSOM WITH FRUIT, (*Prunus avium*), 3B

Made of unbreakable plastic, this model shows the blossom of the sweet cherry (3-parts) enlarged 7 times as well as a cherry fruit enlarged 3 times. The cherry blossom can be split into two halves to reveal the removable ovary with style and stigma. (see 3B Biology Catalogue for more models.)



Cat. No. 51CBF **\$376.00**

### TYPICAL FLOWER MODEL

A durable model of a typical flower made of unbreakable polypropylene plastic. All parts are detachable, showing thalamus, sepals, petals, androecium showing section of ovules (ovary with a single ovule inside). On base and numbered with English key card. Dimensions, L X W x H : 250 x 275 x 310 mm approx.



Cat. No. 51FT **\$64.00**

### DICOTYLEDENOUS PLANT STEM, T.S. & L.S.

This model shows the transverse and longitudinal section of a dicotyledonous stem in which case the cambium ring has been formed but no secondary growth has yet taken place. Useful model for study of epidermis, lenticle, cork layer, cork cambium, cortex parenchyma, starch sheath, medullary rays, phloem, sieve plate, sieve tube, intrafascicular cambium, xylem, pitted vessels, bordered pitted vessels, annular vessels, spiral vessels, pith etc. Mounted on base, with key card. Overall dimensions 18x53x41cm approx.



Cat. No. 51DPS **\$78.00**

### MONOCOTYLEDENOUS PLANT STEM, T.S. & L.S.

Exhibits the various tissues and the scattered closed and collateral vascular bundles in transverse and longitudinal sections in maize. Displays large pitted vessels, spiral and annular vessels. On base with key card. Overall dimensions 18x53x41cm approx.



Cat. No. 51MPS **\$70.00**

### ROOT ANATOMY - DICOT

This model demonstrates the general arrangement of tissues. Stem is cut transversely, longitudinally, radially and tangentially at different planes to make the structural details very clear and the formation of various tissues easily understandable. Mounted on stand, with key card. Overall dimensions 23x38x18cm approx.



Cat. No. 51RA **\$75.00**

## MODELS - CELLULAR

### ANIMAL CELL MODEL, 3B

This high quality two piece animal cell model shows the form and structure of a typical animal cell as viewed by an electron microscope. For purposes of better illustration, all important organelles are shown in raised relief and displayed in colour, including Nucleus, Mitochondrion, Smooth Endoplasmic Reticulum (ER), Rough Endoplasmic Reticulum (ER), Basal membrane, Collagen fibres, Golgi apparatus, Microvilli and Lysosome. 21 x 11 x 31cm



Cat. No. 51MAC **\$490.00**

### MODEL TYPICAL ANIMAL CELL – PVC

A Model of a typical Animal Cell, 20,000x magnification. Shows structure & cell organelles. 42x30x16cm on base. Made from high quality PVC with European styling.

Cat. No. 51TACP **\$166.00**



### MODEL TYPICAL ANIMAL CELL - BASIC

A three dimensional model with one side dissected to show complete internal structures. Mounted on a base with key card.

Cat. No. 51TAC **\$44.00**



### MITOSIS ANIMAL MODEL

A set of 10 models showing resting cell, early prophase, prophase, late prophase, metaphase, late metaphase, anaphase, late anaphase, telophase and daughter cells, all mounted on board with Key Card.

Cat. No. 51MA **\$64.00**



### MITOSIS PLANT MODEL

A set of 10 models showing all the stages of karyokinesis and cytokinesis from metabolic cell to the formation of two daughter nuclei. Mounted on board with Key Card.

Cat. No. 51MP **\$106.00**



### MEIOSIS PLANT MODEL

Set of 15 models showing chromosome changes from the resting nucleus to the formation of four daughter cells; mounted on board.

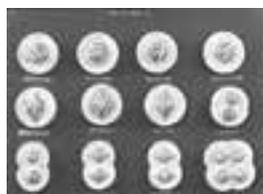
Cat. No. 51MEP **\$98.00**



### MEIOSIS ANIMAL MODEL

A set of 12 models showing detailed stages in meiotic cell division detailing the microscopic structures. Mounted on board with Key Card.

Cat. No. 51MIA **\$54.00**



### MODEL TYPICAL PLANT CELL - BASIC

This economical fibreglass model is an enlarged generalised plant cell as seen under the electron microscope. A portion of the wall is removed to show ectoplast, endoplast, tonoplast, vacuoles, nuclear structure, plastids, mitochondria, etc. Mounted on a base with key card.

Cat. No. 51TPC **\$28.00**



### PLANT CELL MODEL, 3B

This two piece plant cell model from 3b Germany shows the structures of a typical plant cell with cytoplasm and cell organelles, as viewed by an electron microscope. For purposes of better illustration, all important organelles of the plant cell are in raised relief and displayed in colour. Features included in the plant cell model: Cell wall, Cell membrane, Nucleus, Smooth Endoplasmic Reticulum, Rough Endoplasmic Reticulum, Ribosomes, Chloroplasts, Mitochondria and Dictyosomes / Golgi apparatus. The plant cell model is magnified 500,000 to 1,000,000 times.

Cat. No. 51MPC **\$550.00**



### PETRI DISHES



100mm diameter, glass, reusable

Cat. No. 44PDG **\$3.30**

90mm diameter, plastic, disposable

Pack 20 Cat. No. 44PD **\$4.90**

Pack 500 Cat. No. 44PD5 **\$99.80**

### STETHOSCOPE



Single diaphragm

Cat. No. 48ST251 **\$17.50**

### SWABS

Swab Sterile Cotton 15cm Pk/5

Cat. No. 48SWAB **\$1.20**

### TURBIDITY TUBE

Fit the two sections of Perspex tube together, collect your water sample and gradually pour in while looking down the tube. Stop pouring at the point where the symbol on the bottom of the tube is just visible and note the reading on the arbitrary scale. Ideal for comparative measurements of turbidity in environmental investigations. No calibration required.

Cat. No. 48TT **\$53.00**



### POSTERS

see Pg40 General Lab Section.

### QUADRATS



Powder-coated steel wire Quadrat Grid for taking population survey on flat terrain. 50 x 50cm with 10cm grid size.

Cat. No. 48Q **\$25.50**

## CHEMICALS From ECP, TFS and MERCK NZ

**YOUR ORDER WILL BE SHIPPED DIRECTLY FROM ONE OR MORE OF OUR CHEMICAL SUPPLIER(S) [ECP Ltd, ThermoFisher Scientific Ltd.(TFS), Merck NZ Ltd.] & INVOICED BY DELTA EDUCATIONAL SUPPLIES LTD. Chemicals listed herein are ECP products unless otherwise noted.**

We can supply thousands of products and not all are listed here. If you cannot see the item you want, please phone us at Delta on 0508-6-5-4-3-2-1.

**PRICES** Please note that chemical prices exhibit a high level of fluctuation. Prices herein are therefore indicative only.

**STANDARD CHARGES TO ALL ORDERS: \$7.00 FOR PACKING CHARGE AND \$7.60 FOR PICKING AND DOCUMENTATION FEE ONLY IF HAZARDOUS GOODS ARE INCLUDED.**

### FREIGHT

NB: Freight Dangerous Goods - The dangerous classes of chemicals need to be transported separately so there may be more than one freight charge per order. **Separate Freight charges will also apply in the event that more than one supplier must be used in order to fulfil your order, or if you choose to order from more than one supplier.**

ECP Delivery Charges: Please go to <http://www.ecplabchem.co.nz> to see the new range of economical ECP Freight charges ranging From \$5.00 and up. ECP now has a South Island warehouse!

### PRODUCT GRADES

**AR = Analytical Reagent, BP = British Pharmacopoeia; LR = Lab Reagent; TECH = Technical**

NB: For the products designated LR or TECH, an analytical grade is available at a slightly higher price, but the LR and TECH grades have been considered suitable for school use. Analytical Reagents meet the strict ACS standard. The ECP BP products are LR grades that also meet BP.

### **NOTES:**

1. **ETHANOL** - Post your valid Customs permit to ECP direct at ECP Ltd, PO Box 34-125 Birkenhead 0627. Attn: Eva.
2. This list is condensed- Please inquire re: other chemicals of interest.



Code - Size	Product (No Chemicals Stored on Delta Premises.)	Price
V193-6S-G2500	Acetic acid, glacial AR 2.5L	\$99.00
10608-5L	Acetone LR 5L	\$45.00
10601-P2500	Acetone, AR Plastic Bottle	\$24.99
11101-100g	Agar Powder AR	\$30.00
11101-500g	Agar Powder AR	\$129.00
11301-500g	Aluminium ammonium sulphate AR	\$24.00
11501-500g	Aluminium nitrate AR	\$48.00
11601-500g	Aluminium potassium sulphate AR	\$24.00
11701-500g	Aluminium sulphate AR	\$24.00
3256-45-4L	Ammonia solution 28% - 30% AR	\$48.00
11901-500g	Ammonium Acetate AR	\$17.90
12001-250g	Ammonium carbonate AR	\$24.00
12201-500g	Ammonium chloride AR	\$21.00
12301-250g	Ammonium dichromate AR	\$30.00
12501-500g	Ammonium hydrogen carbonate AR	\$14.00
12908-250g	Ammonium iron (III) Citrate brown LR	\$48.00
12901-100g	Ammonium iron (III) Citrate green AR	\$54.00
13001-500g	Ammonium iron (III) sulfate AR	\$37.00
12801-500g	Ammonium iron (II) sulfate AR 500g	\$29.00
13701-250g	Ammonium sulfate AR	\$14.90
13801-500g	Ammonium thiocyanate AR	\$39.00
13848-50g	Diastase mixture of Amylases 50g	\$64.00
13908-500g	Anti-bumping granules (activated alumina)	\$29.00
14301-500g	Barium chloride AR (2 H <sub>2</sub> O)	\$30.00
14401-500g	Barium hydroxide AR (octahydrate)	\$59.00
14601-250g	Barium sulfate AR	\$19.00
14808-500ml	Benedict's solution LR	\$24.00
14808-1L	Benedict's solution LR	\$36.00
14951-100g	Benzoic acid AR	\$14.00
15101-500ml	Benzyl alcohol AR	\$44.00
15401-500g	Boric acid, powder AR	\$24.00
15607-5g	Bromocresol green VR pH 3.8 - 5.4	\$59.90
15637-5g	Bromocresol purple VR pH 5.2 - 6.8	\$65.00
15707-10g	Bromophenol Blue VR pH 3.0 - 4.6	\$25.00
15757-10g	Bromothymol blue VR pH 6.0 - 7.6	\$34.00
16101-500ml	Buffer solution pH 10.0 AR	\$16.00
15801-500ml	Buffer Solution pH 4.0 AR	\$16.00
15901-500ml	Buffer Solution pH 7.0 AR	\$16.00
16401-500ml	Butan-1-ol (n-butanol) AR	\$32.00
16508-500ml	Butan-2-ol LAB GRADE (sec-butanol)	\$47.00
33401-500ml	iso-Butanol (2-methyl propan-1-ol) AR	\$48.00
33508-500ml	tert -Butanol (2-Methylpropan-2-ol) LR	\$27.00
16801-100ml	Butylamine AR (N-) 99%	\$19.90
17008-500ml	Butyric acid LR (Butanoic acid) 99%	\$35.00
17408-1Kg	Calcium carbonate LR	\$24.00
17501-500g	Calcium chloride, dihydrate AR	\$19.00

Code - Size	Product (No Chemicals Stored on Delta Premises.)	Price
02450-100g	Calcium metal granvles 100g (98%), 2-4mm Approx	\$96.00
18001-250g	Calcium hydroxide LR	\$22.00
18201-500g	Calcium nitrate AR	\$44.00
18308-250g	Calcium oxide, powder AR	\$30.00
18501-500g	Calcium sulphate, dihydrate AR	\$16.50
18548-400g	Carbon activated powder LR	\$26.00
Chemizorb	Chemical Spill Products - See Safety Section This Catalogue.	
9179-500ml	Chlorobenzene AR	\$29.00
18941-500ml	Chlorobutane AR (-1)	\$68.00
19001-G2500	Chloroform AR, 2.5L	\$62.00
19301-250g	Citric Acid AR • 1H <sub>2</sub> O	\$19.80
19501-100g	Cobalt (II) chloride AR	\$47.00
19508-100g	Cobalt (II) chloride LR 96%	\$30.00
19807-10g	Congo red pH 3.0 - 5.0	\$13.00
20001-250g	Copper (II) carbonate basic LR	\$75.00
20108-500g	Copper (II) chloride LR	\$29.00
1792-01-500g	Copper (II) chloride AR	\$125.00
1800-01-500g	Copper (II) nitrate AR	\$131.20
20408-250g	Copper (II) oxide, powder LR	\$34.00
20608-250g	Copper (II) sulphate Anhydrous LR	\$79.00
20509-500g	Copper (II) sulphate TECHNICAL (5H <sub>2</sub> O)	\$19.90
20509-2.5Kg	Copper (II) sulphate TECHNICAL (5H <sub>2</sub> O)	\$86.90
20501-500g	Copper (II) sulphate AR (5H <sub>2</sub> O)	\$47.00
19911-500g	Copper foil 0.10 mm thick AR	\$129.00
19911-250g	Copper foil -about 0.10mm thick AR	\$70.00
19918-250g	Copper turnings LR chunky	\$38.00
20801-1L	Cyclohexane AR, 1L	\$59.00
20801-500ml	Cyclohexane AR 500ml	\$39.00
20901-500ml	Cyclohexene LR	\$79.00
29038-1L	Detergent, Labware concentrate	\$11.90
21408-P2500	Dichloromethane LR, 2.5L	\$24.00
21401-500ml	Dichloromethane AR, 500ml	\$24.00
21601-2500	Diethyl ether AR, 2.5L	\$92.00
9216-01-500ml	Diethylamine AR, JT Baker	\$106.00
1403-500ml	Dow Corning 200/350cS silicone fluid	\$38.00
22601-500g	EDTA disodium salt AR	\$36.00
22807-10g	Eriochrome black T, 10g	\$25.00
22921-G2500	Ethanol Absolute, AR/ACS Grade Customs Permit Required ( <b>Pease Order with Delta and post direct to: ECP Ltd PO Box 34-125, Birkenhead 0627 Attention: Eva</b> )	\$50.00
23201-G2500	Ethyl acetate AR	\$60.00
23201-1L	Ethyl acetate AR	\$24.00
32558-G2500	Ethyl methyl ketone (Butanone) LR	\$27.50
23508-500ml	Fehlings solution No. 1, 500ml	\$37.00
23608-500ml	Fehlings solution No. 2, 500ml	\$37.00
24201-1L	Formaldehyde (Formalin) solution 37% AR	\$30.00

Code - Size	Product (No Chemicals Stored on Delta Premises.)	Price
3946-500g	Glass beads, about 3mm	\$36.00
25108-250g	Glass wool, low in lead	\$46.00
25301-500g	Glucose anhydrous AR	\$24.00
25501-G2500	Glycerol (or glycerin/e) AR	\$52.00
25501-P500	Glycerol , AR	\$14.00
25601-500g	Glycine, AR	\$25.00
25808-250g	Graphite, fine powder	\$59.00
26431-G2500	Hexane, 98.5% min, AR	\$56.00
26431-P500	Hexane, AR	\$8.90
26901-500ml	Hydrobromic acid, 48% AR	\$63.00
27017-1L	Hydrochloric Acid 1N / 1M, 1L	\$24.00
4655-01-1L	Hydrochloric Acid 0.100M solution, 1L	\$18.00
00172-G2500	Hydrochloric acid 37% AR	\$44.00
27508-2L	Hydrogen peroxide (35%) 100 vols LR	\$60.00
27511-2L	Hydrogen peroxide (30%) 100 vols AR	\$80.00
27647-25g	Hydroxy naphthol blue, disodium salt AR, Vitamin C Indicator	\$40.00
27701-500g	Iodine AR, 500g <b>(End user declaration required)</b>	\$229.90
27701-100g	Iodine AR, 100g <b>(End user declaration required)</b>	\$60.00
27938-100ml	Iodoethane LR, 100ml	\$238.00
27985-250ml	Iodomethane LR	\$50.00
28108-250g	Iron (II) chloride LR (Tetrahydrate)	\$59.00
28201-500g	Iron (II) sulphate AR	\$25.00
28308-250g	Iron (III) chloride anhydrous LR	\$24.00
28501-500g	Iron (III) nitrate, AR	\$48.00
280091-500g	Iron Filings 0.2-0.3mm, TECHNICAL	\$49.00
28018-500g	Iron Powder TECHNICAL, 325mesh	\$29.00
14208-100g	L-Ascorbic acid LR	\$10.00
29638-100g	Lead (II/IV) oxide (red lead) LR	\$29.00
29528-250g	Lead carbonate, basic LR $2\text{PbCO}_3 \cdot \text{Pb}(\text{OH})_2$	\$54.00
29558-100g	Lead chloride LR	\$24.00
29408-500g	Lead sheet 99% LR	\$28.00
29648-100g	Lead monoxide LR	\$29.00
29601-500g	Lead nitrate AR	\$55.00
40LIPASE	Lipase 200g	\$58.75
29748-100g	Lithium chloride LR	\$38.00
29908-150g	Magnesium carbonate, light LR	\$27.00
30001-500g	Magnesium chloride AR	\$20.00
30101-250g	Magnesium hydroxide AR	\$17.00
30201-500g	Magnesium nitrate AR	\$83.00
30301-100g	Magnesium oxide AR	\$23.00
29808-25g	Magnesium ribbon LR	\$18.50
29809-25g	Magnesium ribbon cut to 1cm, 25g	\$37.00
30701-500g	Magnesium sulphate, dried AR	\$23.60
30948-500g	Malic acid LR	\$30.00
30938-100g	Malonic acid LR	\$47.00
2540-01-500g	Manganese (II) chloride AR (manganous)	\$59.00
31201-250g	Manganese (II) Sulphate Monohydrate, AR (manganous)	\$40.00

Code - Size	Product (No Chemicals Stored on Delta Premises.)	Price
31308-500g	Manganese dioxide LR	\$46.00
31607-1Kg	Marble chips, 4-12 mm or smaller (Calcium Carbonate chips)	\$18.00
1059861000	Marble Granular Merck, For CO <sub>2</sub> , 0.5-2.0mm, 1Kg	\$97.60
31801-100g	Mercury (II) chloride AR	\$98.00
31851-50g	Mercury (II) nitrate • H <sub>2</sub> O AR	\$54.00
32001-50g	Mercury (II) sulphate AR	\$78.00
32101-P1L	Methanol AR	\$15.00
32101-P2500	Methanol AR 2.5L	\$31.00
32408-250ml	Methyl acetate LR 250ml	\$41.00
32607-25g	Methyl orange, sodium salt (C.I. 13025) LR	\$28.00
32717-500ml	Methyl orange, 0.05% solution LR pH 3.1-4.4	\$23.00
32807-500ml	Methyl red 0.1% solution LR pH 4.2-6.3	\$39.00
32808-5g	Methyl red, sodium salt LR, powder pH 4.2-6.3	\$25.00
33008-500ml	Methylamine, 40% LR	\$24.00
33108-5L	Methylated Spirits Absolute Colourless, 5L	\$50.00
33108-P2500	Methylated Spirits Absolute Colourless, 2.5L	\$32.00
33308-20g	Methylene blue, 20g	\$28.00
25901-500ml	n-Heptane AR	\$15.00
33858-500ml	Nessler's reagent (ammonia detmn) LR	\$83.00
34001-250g	Nickel II chloride AR	\$74.00
34201-500g	Nickel sulphate AR, 500g	\$91.00
34201-100g	Nickel sulphate AR, 100g	\$25.00
9601-04-G2500	Nitric acid 69% AR, 2.5L	\$66.00
34401-1L	Nitric acid 69% AR, 1L	\$20.00
23708-500ml	Octan-1-ol LR	\$45.00
34801-500g	Oxalic acid AR	\$40.00
34909-2L	Paraffin, liquid Technical	\$59.00
34908-500ml	Paraffin, Oil LR	\$25.00
35201-500ml	Pentane AR (n-)	\$48.00
35258-25g	Pepsin, activity 0.7FIP-U/mg	\$30.00
5150-100g	Peptone 100g	\$20.00
35501-P2500	Petroleum spirit (pet. Ether) BR 40-60 deg C	\$36.00
2300-10g	Phenol Red LR, pH 6.8-8.4, 10g	\$49.00
0028-04-500g	Phenol AR	\$216.00
40408-50g	Phenolphthalein VR pH 8.3-10.0	\$35.00
40417-500ml	Phenolphthalein, solution pH 8.3-10.0, 500ml 1%	\$18.00
40701-500ml	Phosphoric acid, 85% AR (Ortho) 500ml	\$42.00
40701- 1L	Phosphoric acid, 85% AR (Ortho) 1L in poly pack	\$61.00
18409-500g	Plaster of paris TECHNICAL (Calcium sulfate.1/2H <sub>2</sub> O)	\$14.00
41208-500g	Poly Vinyl Alcohol	\$30.00
41401-250g	Potassium bromide AR	\$36.00
41501-500g	Potassium carbonate, anhydrous AR	\$39.60
41608-250g	Potassium chlorate LR	\$89.00
41701-500g	Potassium chloride AR	\$22.00

Code - Size	Product (No Chemicals Stored on Delta Premises.)	Price
41851-500g	Potassium citrate tribasic. 1H <sub>2</sub> O, AR	\$24.00
41901-250g	Potassium dichromate AR	\$20.00
42101-50g	Potassium Ferricyanide AR	\$16.00
42118-50g	Potassium ferrocyanide LR	\$12.00
42801-500g	Potassium hydroxide pellets AR	\$40.00
42901-100g	Potassium iodate AR	\$38.00
43001-500g	Potassium iodide AR	\$109.00
43201-500g	Potassium nitrate AR	\$39.00
43401-500g	Potassium permanganate AR	\$58.00
43601-500g	Potassium sodium (+)-tartrate AR	\$49.00
43701-500g	Potassium sulphate AR	\$24.00
44101-500ml	Propan-1-ol AR	\$20.00
44221-G2500	Propan-2-ol AR Glass	\$52.00
44308-500ml	Propionic acid LR	\$36.00
44718-500g	Sand, Acid washed	\$16.90
44809-25ml	Sebacoyl Chloride TECH	\$49.90
44938-500g	Silica gel, self indicating, Blue > Pink	\$19.30
45101-25g	Silver nitrate AR	\$169.00
3448-05-2.5	Soda lime, self indicating	\$150.00
45701-500g	Sodium acetate, Tri-hydrate AR	\$28.80
46208-250g	Sodium bromide LR, 250g	\$30.00
46309-1Kg	Sodium carbonate anhydrous TECHNICAL	\$14.00
46351-500g	Sodium carbonate.1H <sub>2</sub> O AR	\$32.00
46401-500g	Sodium carbonate, decahydrate AR	\$59.00
46501-500g	Sodium chloride AR	\$17.90
46501-1Kg	Sodium chloride AR	\$25.00
46631-500g	Tri Sodium citrate AR	\$29.00
46801-500g	Sodium dihydrogen phosphate AR (Sodium Phosphate Monobasic Dihydrate)	\$25.00
47101-500g	Sodium hydrogen carbonate AR	\$19.90
47627-1L	Sodium hydroxide 0.100M solution AR 1L	\$22.00
47501-1kg	Sodium hydroxide pellets AR	\$34.00
47511-1Kg	Sodium hydroxide, minipearl AR	\$34.00
47808-100g	Sodium iodide LR	\$39.00
48009-1Kg	Sodium lauryl sulphate LR	\$32.00
48108-500g	Sodium metabisulphate LR	\$20.00
SL074-100g	Sodium metal cubes	\$69.00
48209-500g	Sodium metasilicate pentahydrate Technical	\$12.00
48401-500g	Sodium nitrate AR	\$39.00
49378-1L	Sodium Silicate 39% Solution, 1 Litre	\$26.00
49401-500g	Sodium sulphate, anhydrous, AR	\$14.90
49701-500g	Sodium sulphide, LR	\$115.00
50001-500g	Sodium thiosulphate AR	\$28.00
50721-500g	Starch, Ultra refined, unmodified AR	\$14.90
50701-250g	Starch soluble AR (For making Iodine Indicator)	\$19.00
50808-300g	Stearic acid powder LR	\$17.00
51001-100g	Strontium chloride AR	\$30.00
51201-500g	Sucrose AR	\$20.00

Code - Size	Product (No Chemicals Stored on Delta Premises.)	Price
51209-500g	Sucrose TECHNICAL	\$10.00
51401-250g	Sulphur, powder AR, 250g	\$28.00
51401-500g	Sulphur, powder AR, 500g	\$49.00
2876-6S-G2500	Sulphuric acid 98% AR	\$76.00
52001-500g	Tartaric acid, AR	\$30.00
52108-500ml	Tetrachloroethylene TECHNICAL	\$31.00
52601-100g	Tin Granulated AR	\$79.00
52901-G1L	Toluene AR	\$28.00
52901-G2500	Toluene AR	\$58.00
A7967-250g	Trichloroacetic acid AR	\$69.00
54017-each	Universal indicator colour chart, single	\$1.60
54007-500ml	Universal indicator solution VR pH 3.0-11.0	\$28.00
UN6401-P500ml	Universal Indicator ph 1-14 500ml	\$60.00
54101-500g	Urea AR	\$30.00
ZL004-500g	Zinc carbonate LR	\$77.00
55101-250g	Zinc chloride AR	\$34.90
ZT006-500g	Zinc foil 0.1mm	\$129.00
55208-500g	Zinc nitrate LR	\$37.00
55301-500g	Zinc oxide AR	\$35.00
54801-500g	Zinc Shot/Granules AR	\$77.90
54808-500g	Zinc Flake / Large granules LR	\$29.00
55401-500g	Zinc sulphate AR 7H <sub>2</sub> O	\$32.00

## PRODUCT GRADES

**AR = Analytical Reagent, BP = British Pharmacopoeia; LR = Lab Reagent; TECH = Technical**

NB: For the products designated LR or TECH, an analytical grade is available at a slightly higher price, but the LR and TECH grades have been considered suitable for school use. Analytical Reagents meet the strict ACS standard. The ECP BP products are LR grades that also meet BP.

# CHEMISTRY

Our range of molecular model kits is totally interchangeable with a number of other brands including Molymod. Below is but a sampling of the comprehensive range. Contact us for any equivalent which you do not see listed here. ALL equivalent kits and spare parts are available and some of the more common ones are listed below.

Introductory Set (Organic); 48 atoms with 52 links. Interchangeable with MMS-001.

**Cat. No. 41MM001 \$55.00**

Molecular Biochemistry Teacher Open Type Set; 72 Atoms & 40 links. Interchangeable with MMS-007.

**Cat. No. 41MM007 \$138.00**

Molecular Biochem. Student/Teacher Set; 82 atoms & 40 links. Interchangeable with MMS-010.

**Cat. No. 41MM010 \$79.00**

Molecular Organic Student Set; 50 atoms, 12 grey long flexible multiple links, 26 grey standard single links, 26 short white links, link extractor tool, Instructions. Interchangeable with MMS-008.

**Cat. No. 41MM008 \$66.00**

Molecular Organic Teacher Set; 97 atoms & 140 Links. Interchangeable with MMS-003.

**Cat. No. 41MM003 \$98.00**

Molecular Organic/Inorganic Student Set; 47 atoms & 35 Links. Interchangeable with MMS-009.

**Cat. No. 41MM009 \$68.00**

Molecular Org./Inorganic Teacher Set; 94 atoms & 86 links. Interchangeable with MMS-004.

**Cat. No. 41MM004 \$80.00**

Complex Molecular Ions set (7 Models). Consists of 81 atoms & 160 Links. The complex ions molecular model teacher's set includes water, ammonia, cyanide and ethylene diamine ligands for building compounds. Interchangeable with MMS-006.

**Cat. No. 41MM006 \$88.00**

## Spares:

Carbon atom (black) 4 Holes, 109 tetrahedral, 23mm Diameter, pk/10, Interchangeable with MA-400.

**Cat. No. 41MMC4 \$10.00**

Halogen (Chlorine) atom (green) 1 hole, 17mm Diameter, pk/10, Interchangeable with MA-111.

**Cat. No. 41MMCL \$8.05**

Halogen (green) 1 hole, 20mm Diameter pk/10, Interchangeable with MA-101.

**Cat. No. 41MMH20 \$9.05**

Hydrogen (white) 1 hole, 17mm diameter. pk/10, Interchangeable with MA-110.

**Cat. No. 41MMH \$8.05**

Metal (grey) 1 hole, 17mm Diameter. Interchangeable with MA-112, pk/10. **Cat. No. 41MMM \$8.05**

Nitrogen (blue) 4 Holes, 109 tetrahedral, 23mm Diameter, pk/10. Interchangeable with MA-401. **Cat. No. 41MMN \$14.00**

Nitrogen (blue) 3 Hole, trigonal, 23mm Diameter, pk/10 Interchangeable with MA-311. **Cat. No. 41MMN3 \$15.00**

Nitrogen (blue) 3 hole, 107 pyramidal, 23mm diameter, pk/10, Interchangeable with MA-300. **Cat. No. 41MMNP \$12.00**

Oxygen Centre 2 hole 105 , pk/10, Interchangeable with MA-200. **Cat. No. 41MMO2 \$12.50**

Phosphorus (purple) 4 Holes, 109 tetrahedral, 23mm diameter, pk/10, Interchangeable with MA-407. **Cat. No. 41MMP \$14.50**

Sulphur (yellow) 2 holes, 105 angular, 23mm Diameter, pk/10, Interchangeable with MA-201. **Cat. No. 41MMS2 \$12.00**

Sulphur (yellow) 4 Holes, 109 tetrahedral, 23mm Diameter, pk/10, Interchangeable with MA-403. **Cat. No. 41MMS4 \$14.30**

Sulphur (yellow) 6 Holes, 90 octahedral, 23mm Diameter, pk/10, Interchangeable with MA-613. **Cat. No. 41MMS6 \$16.00**

Link Medium (grey) Standard link for single bonds. Interchangeable with ML-12, pk/25 **Cat. No. 41MML \$7.80**

Link long Flexible (grey), for double or triple bonds, Interchangeable with ML-13, pk/25. **Cat. No. 41MMLL \$8.25**

Link Short White pk/25, Interchangeable with ML-10. **Cat. No. 41MMLS \$5.50**

Tool Short link remover, Interchangeable with SLRT1. **Cat. No. 41MMR \$1.60**

## MOLECULAR MODELS, 3B



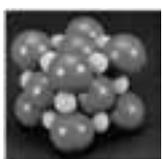
### CUBIC SPATIALLY CENTRED LATTICE MODEL

Shows the structure of a spatially centred lattice. **Cat. No. 51CSL \$184.00**



### DIAMOND

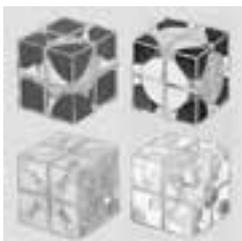
The hardest naturally occurring substance. Understand why! Model is pre-assembled. 260 x 240 x 230mm; 1.5kg **Cat. No. 51MD \$186.00**



## SODIUM CHLORIDE

A versatile pre-assembled model to demonstrate the ion lattice crystal type (NaCl, KCl, NaBr, AgCl, MgO and CaO)  
165 x 160 x 200 mm; 2.6kg

Cat. No. 51MSC **\$135.00**



## CRISCUBES

Criscubes are ingenious rotating crystal structure models that demonstrate in 3 dimensions the lattice structure of crystals. Each model is constructed from eight transparent sections which contain cut polystyrene shapes. By turning

the cube inside out, the perspective of the internal crystal structure centres on a different atom. Included are x2 acrylic mirrors to create an enhanced larger view. Set of four cubes: Body-centred crystal lattice, Face-centered cubic lattice, Salt-form crystal lattice, and Diamond-form crystal lattice. Specifications: Crystals: transparent acrylic resin, Atomic spheres: painted foam polystyrene, Dimensions: 72x72x72mm, Weight: approx. 140g, Accessories: x2 plastic mirror, 105x180mm.

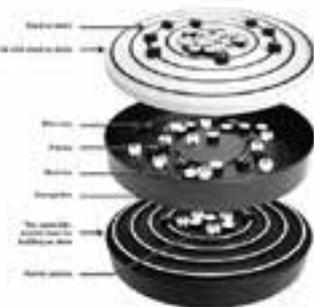
Cat. No. 41CC **\$579.00**

## BRIGHT ATOMS

The **BRIGHT Atom™** makes science easier and more comprehensible. This unique model, based on Bohr's atomic model, lets students make their own atoms, isotopes and ions. Hands-on experience gives students a natural comprehension of our smallest building blocks.

Use these tactile models in Chemistry, Physics and Biology classes. In one package you get a box with lid, 4 electron orbitals on the lid and 4 on the underside of the box, 30 protons, 30 neutrons, 30 electrons, product description & smart storing of subatomic particles inside the box. The models can easily be stacked for storage.

Cat. No. 44BA **\$55.00**



The **BRIGHT Teacher Atom™** is a magnetic demonstration tool for the science classroom that lets the teacher present the abstract concepts of atomic structure, isotopes and ions to the class in an easy and concrete way. All parts of this product, except for the storing board, are magnetic (2 electron orbitals, 2 nuclei and 60 subatomic particles). Place the chosen parts directly on the whiteboard when teaching or use the back of the storing board. Use in Chemistry, Physics and Biology classes to make teaching easier & give a good visual of the concepts to complement verbal teaching. Easy to use, easy to store.



Cat. No. 44BTA **\$290.00**

The **BRIGHT Teacher Molecule™** is a magnetic receptive demonstration tool that lets the teacher present molecules and chemical bonding to the class in an easy and concrete way in Chemistry, Physics and Biology classes. Includes 90 atoms in 6 different colours to enable a wide range of molecules to be made: 20 white Hydrogen, 20 black Carbon, 20 red Oxygen, 10 blue Nitrogen, 10 green Chlorine, 10 yellow Sulphur and 50 bonds. Can be used with or without bonds. All parts are magnetic and can be used on the classroom whiteboard; you can also use the back of the Teacher Atom storing board.



Cat. No. 44BTM **\$310.00**

## BRIGHT Science Kit™

One Teacher Atom™, eight BRIGHT Atoms™ and a lesson plan is called the BRIGHT Science Kit™. The BRIGHT Teacher Atom™ makes the presentation of atoms, isotopes and ions easy and the BRIGHT Atom™ lets the students make their own atoms, isotopes and ions using their hands. Visual and hands-on experience gives students a natural understanding of atoms in Chemistry, Physics and Biology classes. It's all there in the BRIGHT Science Kit™.

Cat. No. 44BSK **\$620.00**



## BRIGHT Teacher Kit™

The science teacher's choice in the classroom –the BRIGHT Teacher Kit™ consisting of one BRIGHT Teacher Atom™ and one BRIGHT Teacher Molecule™. All you need to present the abstract concepts of atomic structure, molecules and chemical bonding to the class in one kit. Both pedagogic tools can be used directly on the classroom whiteboard; easy and clear.

Cat. No. 44BTK **\$550.00**



## CHARCOAL BLOCKS

100mm x 25mm. Pack of 12

Cat. No. 41CB **\$15.20**



## CHROMATOGRAPHY PAPER

Chromatography Paper Whatman No.1, 2cmx100m

Cat. No. 41PC2 **\$66.00**

Chromatography Paper 20X20cm, PK/100 Sheets

Cat. No. 41PC20 **\$98.00**

**CONDUCTIVITY APPARATUS**

For testing the conductivity of solutions.

**PLATE TYPE FOR BEAKERS****Cat. No. 41CAP** **\$19.30**10+ **\$18.20****TEST TUBE TYPE****Cat. No. 41CAT** **\$15.60**10+ **\$14.00**

**LED TYPE** for solids or liquids. The response of the LED (light emitting diode) when both alligator clips are directly in contact with a solid material or when immersed in a solution will indicate its conductivity. The brightness of the LED indicates how conductive the sample is.

**Cat. No. 41CAL** **\$23.50**10+ **\$21.95****CONSERVATION OF MASS APPARATUS**

With this apparatus, two reagents can react and the reaction vessel's weight noted before and after a chemical change or the release of gas. Both reagents can be kept separate until mixed. Material: polypropylene, 77 mm x 161 mm. Apparatus: X1 Screw-top Bottle, transparent plastic, 150x65mm (HxDiam), X1 Small Bottle, transparent plastic, 40x26.5mm (HxDiam), X1 Lid with Rubber Seal – used for securing smaller bottle.

**Cat. No. 41CMA** **\$32.00****CRUCIBLES**

See Glass, Plastic and Porcelain section.

**COLORIMETER, ADVANCED**

Accurate, easy to use instrument. The kit includes test tubes, cuvettes, tube adapter, light shrouds (1pr), 9V battery and instructions.

- Excellent for Advanced Chemistry
- Microprocessor-controlled
- 4 Selectable colour sources with auto-recalibration
- 0 - 100% transmittance or 0-2.3 Absorbance Units
- Clear LCD display
- Compatible with any 0-5V Datalogger
- 9V Battery or optional 240V/12V AC Pak
- Low Battery warning

**Cat. No. 43COLA** **\$528.00**

Replacement Cuvettes, pack of 10.

**Cat. No. 43COLC** **\$17.20**

AC Power Pack

**Cat. No. 43COLAP** **\$23.60****ELECTRODES,****PLATE TYPE, Each**

Electrode with a simple terminal for experiments in electroplating and the construction of cells.



Carbon	75x 25 x 5mm	<b>Cat. No. 42EDC</b>	<b>\$5.50</b>
Copper	75 x 25mm	<b>Cat. No. 42EDCU</b>	<b>\$6.00</b>
Iron	75 x 25mm	<b>Cat. No. 42EDFE</b>	<b>\$5.50</b>
Lead	75 x 25mm	<b>Cat. No. 42EDPB</b>	<b>\$5.80</b>
Stainless Steel	75 x 25mm	<b>Cat. No. 42EDSS</b>	<b>\$5.50</b>
Tin	75 x 25mm	<b>Cat. No. 42EDSN</b>	<b>\$12.80</b>
Zinc	75 x 25mm	<b>Cat. No. 42EDZN</b>	<b>\$5.50</b>

**ELECTRODES****CARBON ROD/GRAPHITE**

100 x 5mm LxD, for electrolysis, each	<b>Cat. No. 42ECR105</b>	<b>\$2.70</b>
75 x 6mm LXD, each	<b>Cat. No. 42ECR75</b>	<b>\$2.00</b>
100 x 10mm LXD, each	<b>Cat. No. 42ECR100</b>	<b>\$3.60</b>
150 x 6mm LXD, each	<b>Cat. No. 42ECR150</b>	<b>\$3.20</b>

**ELECTRODE SET****'Norwood' type in glass tubes**

The 'Norwood' electrode Set is used for simple electrolysis experiments. Includes two carbon, one stainless steel and one platinum electrode each mounted in glass holder. The set is complete with electrode support bracket to fit a small beaker. Instructions included.

**Cat. No. 42ENT** **\$98.50****ELECTROLYSIS SAFETY APPARATUS**

A safe, enclosed apparatus for simple electrolysis experiments. Compatible solutions include sodium hydroxide, hydrochloric acid, sodium chloride aqueous solution. Electrodes: x2 Platinum coated titanium electrodes. Size: 140 x 80 x 80 mm (including protrusions). Accessories: Light Silicon (White) Plug x2, Silicon Plug (Blue) x1, Cap (Black) x2. (Genecon not included)

**Cat. No. 41ESA** **\$140.00****FILTER PAPER****Student Grade**

7.0cm	100/pack	<b>Cat. No. 41FP70</b>	<b>\$6.80</b>
9.0cm	100/pack	<b>Cat. No. 41FP90</b>	<b>\$8.65</b>
12.5cm	100/pack	<b>Cat. No. 41FPSG</b>	<b>\$7.50</b>
15.0cm	100/pack	<b>Cat. No. 41FP150</b>	<b>\$8.70</b>

## INDICATOR PAPERS



Paper, Cobalt Chloride, Vial, 100 Strips	Cat. No. 48PCC	\$7.60
Litmus Blue, vial, 100 strips	Cat. No. 48PLB	\$3.90
Litmus Red, vial, 100 strips	Cat. No. 48PLR	\$3.90
Litmus Neutral, vial, 100 strips	Cat. No. 48PLN	\$4.60
Starch Iodide, vial, 100 strips	Cat. No. 48PKI	\$6.65
Universal pH 1 - 14, Economy Grade pack 100 strips	Cat. No. 48PHE	\$6.00
Universal, pH 1-14, Pk/200 Strips, SSS Brand.	Cat. No. 48PHS	\$8.95
Universal pH 1 - 14, Roll, 5m.	Cat. No. 48PHM	\$28.00
pH Indicator pH 0-14 x 1.0, Non-Bleeding PK/100	Cat. No. 48PHMS	\$36.50

### Indicator Papers, Narrow Range, Machery-Nagel, 5m Roll:

	Cat. No.	
Indicator Paper pH 0.5-5.5	48PNR	\$28.90
Indicator Paper pH 3.8-5.8	48PNR3	\$28.90
Indicator Paper pH 4.0-7.0	48PNR4	\$28.90
Indicator Paper pH 6.4-8	48PNR6	\$28.90
Indicator Paper pH 7.2-9.7	48PNR7	\$28.90
Indicator Paper pH 8-10	48PNR8	\$28.90
Indicator Paper pH 9.0-13.0	48PNR9	\$28.90
Indicator Paper pH 12-14	48PNR12	\$28.90

### pH Indicator Strips, Machery-Nagel, Narrow Range, Non Bleeding, pk/ 100.

	Cat. No.	
pH 4.5-10 x 0.5	48PNS410	\$38.00
pH 6-10 x 0.3/0.4	48PNS610	\$38.00
pH 5.1-7.2 x 0.3	48PNS57	\$38.00
pH 6-7.7 x 0.3/0.4	48PNS67	\$38.00
pH 0-6 x 0.5	48PNS06	\$38.00
pH 3.6-6.1 x 0.3/0.5	48PNS36	\$38.00
pH 2-9 x 0.5	48PNS29	\$42.00



### MELTING POINT APPARATUS, SIMPLE

Aluminium cylinder 65mm Ø x 50mm high, drilled with hole to take up to 7mm thermometer (not supplied). The substance for which the melting point is required is sprinkled thinly on the block and gently heated under a Bunsen flame. The temperature at which the substance melts is recorded from the thermometer.



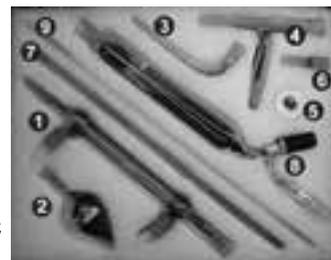
Cat. No. 41MPAS \$78.00

## ORGANIC CHEMISTRY SET

This Quick Fit equivalent boxed set is designed to enable organic chemistry to be taught to an advanced level. <sup>14/23</sup> Fittings.

Set includes:

- 1 Liebig condenser.
- 2 50cm<sup>3</sup> pear-shaped flask.
- 3 Receiver adaptor.
- 4 Still head.
- 5 Stopper.
- 6 Screwcap adaptor.
- 7 Thermometer -10 to 110°C
- 8 50cm<sup>3</sup> dropping funnel.
- 9 Air leak-steam inlet tube. Cat. No. 490CS \$144.00



**SPARE PARTS FOR 490CS** (refer numbered parts in image above)

1. Liebig Condenser <sup>14/23</sup> Cat. No. 490CSC \$24.00
2. Flask, pear, 50ml Cat. No. 490CSFP50 \$16.00
3. Receiver/Adaptor, Plain Bend <sup>14/23</sup> Cat. No. 490CSRA \$12.00
4. Still Head <sup>14/23</sup> Cat. No. 490CSH \$22.00
5. Stopper <sup>14/23</sup> Cat. No. 490CSS \$2.00
6. IG Adapt. Thermometer Screwcap <sup>14/23</sup> Cat. No. 490CSSCA \$16.80
7. Thermometer Cat. No. 44TGF \$4.30
8. Dropping Funnel W/Tap Cat. No. 490CSDF \$24.00
9. Air Leak Steam Inlet Tube Cat. No. 490CST \$8.00

**Other parts also available:**

- Thermometer Pocket <sup>14/23</sup> Cat. No. 490CSTP \$12.00  
Thermometer, high temp. Cat. No. 44TS360B \$14.00  
10-360Deg.C Spirit filled

**Other parts also available'**

Keck Clips

These useful joint clips prevent separation at the joints during use of Organic Chemistry sets (QuikFit & Equivalents).



Keck Clip Yellow for 14/23 joints, PP

Cat. No. 490CS14  
\$2.50

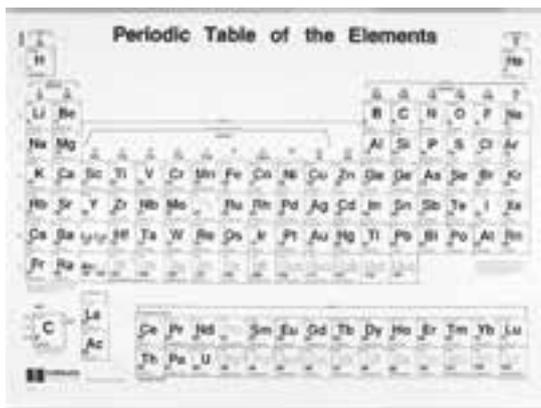


Keck Clip Light Blue for 19/26 joints, PP

Cat. No. 490CS19  
\$2.50

## PERIODIC TABLES

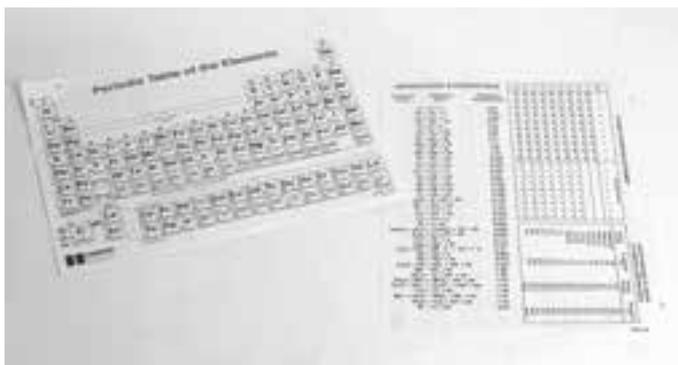
### PERIODIC TABLE WALL CHART, 4 COLOUR



This Large Periodic Wall Chart (1257 x 965mm) is printed in four colours to insure easy visibility from every corner of your classroom. Durable material will withstand heavy classroom use. Elements included up through Uuq#114, updated 2000. Also see Product 50PT479 Notebook Charts (Pad of 100) below.

Cat. No. 50PT474 **\$142.55**

### PERIODIC TABLE CHART, Notebook Pad of 100 Sheets

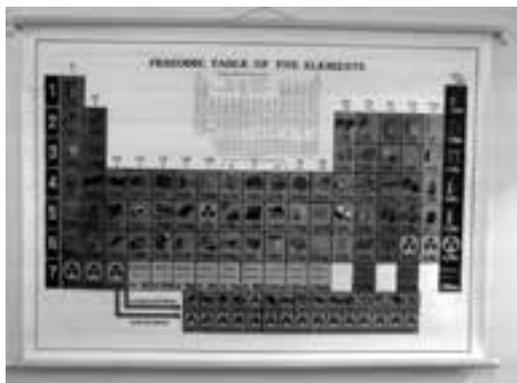


(use with 50PT474 above)

These handy A4 size, 3-hole Periodic Tables for teacher and student use will find many applications in the Chemistry class. 100 sheets per pad.

Cat. No. 50PT479 **\$49.65**

### ROLL -UP



Made of non-tear plastic on rod with string. Roll up and clip for storage. Depicts the elements in their natural state. 101 x 73cm.

Cat. No. 50PT **\$22.00**

### PERIODIC TABLE IN EARTH AND SKY

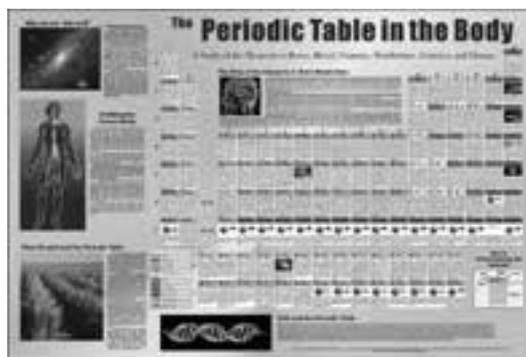
This periodic table poster is a 2008 edition and includes new elements, great photos and essential information. This chart features fabulous mineral and astronomical images, information about each element as to its abundance in the Earth's crust, abundance cosmically, element symbol, electron orbitals, atomic weight, toxicity, and its important uses. It also contains a section on the father of the periodic table. Printed on heavyweight stock, it is a tour-de-force of the periodic table. Comes with 28 X 43cm in-color information sheet, with 22cm insert! Laminated. Astronomical images include: M-17, Cat's Eye Nebula, Comet Hale-Bopp, Jupiter, Celestial Geode Nebula, Mars, Star V838, Size: 660 x 965mm.



Cat. No. 50PTES **\$65.00**

### PERIODIC TABLE IN THE BODY

The Periodic Table of the Elements in the Body science poster discusses each of the elements on the Periodic Table in relation to how the body uses them. This biological periodic table poster helps students to understand how the elements are used by bones, blood, metabolism, in genetics and disease. There are five (5) sections to this periodic table. One section examines stars and our chemical ties to the universe, others profile the chemical makeup of the human body, plant growth, DNA, and the role of elements in brain metabolism. Size: 660 x 965mm.



Cat. No. 50PTB **\$65.00**

## pH METER for Education

With features such as a built-in beaker holder, beaker-top electrode holder and rugged, 2-in-1 pH and temperature sensor, the Models HI207 & HI208 are designed to meet busy classroom environments.

This instrument also features an extended pH range, 0.01 pH resolution, battery operation or 12 VDC adapter (included), dual-level LCD with icons for stability and buffer recognition, built-in magnetic stirrer (Model 208 only), automatic pH calibration, and temperature display in either Celsius or Fahrenheit. In addition, all readings are automatically compensated for temperature variations. (See our website for full specifications.)

In the classroom, these compact units reduce clutter and utilize a minimal amount of space on the desktop. Switch to battery power and the instrument can be taken outside the classroom for field studies. When lab time is over, the instrument is easily cleaned and can be placed out of the way—right away.

### KEY FEATURES:

- Compact and lightweight
- Built-in beaker and beaker-top electrode holder
- pH and temperature in one probe
- Built-in magnetic stirrer (HI208 only)
- Dual-level LCD
- Automatic calibration
- Operated by battery or 12 VDC
- C and F temperature scales

Model 208 (with Magnetic Stirrer)

Cat. No. 41PH208 **\$740.00**

Model 207 (without Magnetic Stirrer)

Cat. No. 41PH207 **\$605.00**

## pH METER ACCESSORIES

Spare Electrode for General Purpose & Field Applications

Cat. No. 41PHE1290 **\$138.60**

pH Electrode Storage Solution 500ml

Cat. No. 41PHESS **\$35.00**

Calibration Buffers See "pH CALIBRATION SOLUTIONS" on page 9

## pH TESTER

With this waterproof tester, you can easily measure pH & temperature. Features, such as replaceable electrodes, stainless steel temperature probes and renewable cloth junctions allow these testers to ensure precise and responsive measurements. Features include:

- Waterproof and designed to float
- Automatic temperature compensation

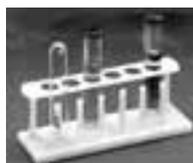


- Automatic calibration
- Easy grip casings
- Hold function
- Automatic shut-off after eight minutes of non-use
- User-selectable temperature in (degC or F)
- Low battery power warning to prevent faulty readings &
- Battery % displayed at start-up
- Cloth renewable junction
- Stability indicator

Cat. No. 41PH27 **\$230.85**

## TEST TUBE RACKS

### POLYPROPYLENE



Holds 6 test tubes 6 x 25mm

Cat. No. 48TTR **\$7.50**

Holds 2 x 25mm & 4 x 16mm

Cat. No. 48TTR2 **\$7.50**

### STAINLESS STEEL

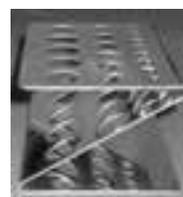
This Z-shaped rack holds 19 test tubes in three rows.

- 8 Microtubes
- 6 x up to 18mm tubes
- 5 x up to 28mm tubes

Ideal for use in water baths or on the bench.

Cat. No. 48TTRZ **\$37.20**

10 + **\$34.00**



### ALUMINIUM



Same as 48TTRZ above but made of aluminium. Blue enamel.

Cat. No. 48TTRZA **\$15.50**



Ideal for Boiling Tubes, made from thick anodised aluminium sheet, in three tiers. Fits 12 x 25mm tubes.

Cat. No. 48TTRA **\$18.75**

### WOODEN Holds 6 x 25mm test tubes



Heavy Duty, Strong Construction.

Cat. No. 48TTRW **\$18.35**

10 + **\$16.50**

20 + **\$15.60**

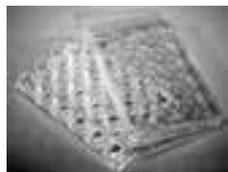


Medium Duty

Cat. No. 48TTRWE **\$10.00**

20 + **\$9.00**

## TISSUE CULTURE PLATES



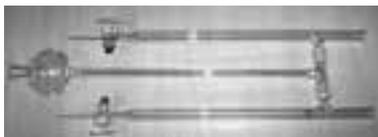
Twenty-four well, clear plastic.

Cat. No. 49TC24 **\$6.45**

## VOLTAMETER, HOFFMAN'S

For simple electrolysis experiments. For convenience, the Voltmeter components are sold separately; for a complete Hoffman's Voltmeter, order all three components below choosing one set of electrodes.

Voltmeter Hoffman's, Borosilicate glass, standard 'H'- Pattern.



Cat. No. 41VH **\$37.00**

Stand, Rod & Clamps only for Hoffman's Voltmeter.

Cat. No. 41VHS **\$24.00**

Electrodes, platinum foil, pair, for Hoffman's Voltmeter.

Cat. No. 41EPHVS **\$30.00**



Electrodes, Superior quality, platinum wire, pair, for Hoffman's Voltmeter.

Cat. No. 41EPHV **\$112.00**

Electrodes, carbon, pair, for Hoffman's Voltmeter.

Cat. No. 42ECRP **\$10.00**

# GENERAL LABORATORY

## APRONS



TECHNICIAN / TEACHER USE

White, machine washable, heavy weight. TPU, 90 x 140mm

Cat. No. 44ATPU **\$38.00**



STUDENT USE

White, disposable, lightweight polythene. 66 X 110mm.

Box of 100

Cat. No. 44ALP800 **\$35.60**

## BAGS - PLASTIC RESEALABLE, PACK 50

(Discounts on quantity)

Size	Cat. No.	1 Packs	4 Packs	10 Packs
130 x 155	03SS130	\$4.00	\$3.60	\$3.20
155 x 230	03SS155	\$5.60	\$4.90	\$4.40
230 x 305 (A4)	03SS230	\$8.20	\$7.40	\$6.80
255 x 355 (F/S)	03SS255	\$11.70	\$10.60	\$9.75
255 x 305	03SS305	\$10.35	\$9.30	\$8.60
300 x 440	03SS440	\$12.30	\$11.00	\$10.20

## BALANCE, TRIPLE BEAM



2610g (with attachment weights.)  
Accuracy to 0.1g

Cat. No. 44BTB750 **\$245.00**

## BALANCES - ELECTRONIC DIGITAL

### OHAUS®

#### Scout® Education Series (SKX)

The new Ohaus SKX Educational range replaces the older ScoutPro series and introduces a host of features: Integrated superior overload protection system rated at 10 capacity protects the balance in demanding classroom environments. Space-saving design allows for stackable storage with the optional Stacking & Storage Cover, set/6. Combined with a simplified 4 button operation, the Scout's large backlit display increases readability in dim lighting conditions and makes it easier to view results from across a desk or lab. With expanded connectivity options including RS232, USB Host, USB Device and Ethernet, the Scout provides added versatility to your data collection and transfer needs. Operation AC adapter (included) or 4 AA batteries (not included).



Model	Capacity	Readability	Cat. No.	
SKX123	120g	0.001g	44SKX123	<b>\$575.00</b>
SKX421	400g	0.1g	44SKX421	<b>\$356.00</b>
SKX6201	6200g	0.1g	44SKX6201	<b>\$565.00</b>
SKX621	620g	0.1g	44SKX621	<b>\$425.00</b>
SKX622	620g	0.01g	44SKX622	<b>\$624.00</b>
SKX2202	2200g	0.01g	44SKX2202	<b>\$780.00</b>

### JADEVER SKY SERIES

Compact Multi-functional Digital Precision Balances for general classroom and field use.

- CE certified
- High resolution
- Sturdy construction
- Back-lit display
- Auto-power off
- Overload and transportation protection
- Mains or battery operation
- RS232 Interface



Model	Capacity(g)	Readability(g)	Pan Size(mm)	Cat. No.
SKY-150	150	0.005	116 diam.	44SK150
SKY-600	600	0.01	145 x 125	44SK600
SKY-1500	1500	0.05	145 x 125	44SK1500
SKY-3000	3000	0.1	145 x 125	44SK3000
All SKY Models				<b>\$365.00</b>

## JADEVER JKH SERIES COMPACT DIGITAL BALANCES

- kg/g, lb, oz, ct, pcs
- Stainless steel weighing pan
- Powered by dry batteries or AC adaptor (included)
- Net weight 710 g



Model	JKH-500	JKH-1000	JKH-4000
Capacity (g)	500	1000	4000
Readability (g)	0.1	0.5	1
Pan size (mm)	140x140		
Dimension (mm)	170x200x45		
Cat. No.	44JK500	44JK1000	44JK4000

**All JKH Models \$198.00**

Lionet Digital Balance Model SF-400A, 5000x1g, Battery operation only.

Cat. No. 44BD5000 **\$80.00**



## ADAM BALANCES

The Adam HCB Series Portable Precision Balances offer the following features: RS-232 and USB interfaces, can be stacked for storage and transportation, ShockProtect™ overload protection, audible overload indicator, HandiCal™ internal calibration for fast and accurate readings, lock down mounting slot for Kensington™ type lock and cable, Dual tare keys, colour coded for easy recognition, Rechargeable Battery and Mains Power with auto power off and low battery indicator, Capacity tracker, Removable draught shield, 15 Weighing units. 2 models offered (others available):

Model HCB123 120x0.001g **Cat. No. 44HCB123 \$585.00**

Model HCB3001 3000x0.1g **Cat. No. 44HCB3001 \$452.00**



The Adam CB Series Basic Precision Balances offer the following features: Large high-contrast display easily visible from a distance, large grade 304 stainless steel pan allows easy cleaning, overload protection helps prevent damage to internal components, sealed keypad protects against dirt and accidental spills, auto power-off to save energy, 2 x AA Batteries Standard /

Optional 6VDC 200mA Adapter. Models offered:

Model CB501 500x0.1g **Cat. No. 44CB501 \$114.00**

Model CB1001 1000x0.1g **Cat. No. 44CB1001 \$154.00**

## BATTERIES HEAVY DUTY & ALKALINE



	AAA	AA	C1	D1	9volt
<b>HEAVY DUTY</b>					
Cat. No.	04R3S	04R6S	04R14S	04R20S	04R22S
Each	<b>\$0.65</b>	<b>\$0.65</b>	<b>\$1.40</b>	<b>\$1.40</b>	<b>\$1.60</b>
<b>ALKALINE</b>					
Cat. No.	04LR03	04LR6	04LR14	04LR20	04LR22
Each	<b>\$1.25</b>	<b>\$1.25</b>	<b>\$2.85</b>	<b>\$3.85</b>	<b>\$4.95</b>

## BENCHKOTE SURFACE PROTECTOR

Benchkote™ is an absorbent, impermeable material designed to protect laboratory surfaces against hazardous spills. The material features a high-quality, smooth, absorbent Whatman paper which quickly absorbs liquid spills and a laminated polyethylene layer that prevents flow through to the working surface. After use the sheet is incinerated or disposed of according to local regulations. 46cm x 50m reel.



Cat. No. 44BK **\$275.00**

## BLADE



### Single Edge

Box 100

Cat. No. 48BSE **\$45.00**

## BLADE Single Edge Craft Knife

Snap off blade, with blade lock.

Small **Cat. No. 02CK1 \$0.90**

Small 20+ **\$0.70**

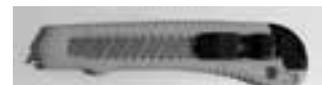
Small 50+ **\$0.55**

Large **Cat. No. 02CK20 \$1.35**

Large 10+ **\$1.15**

Spare Blades Small **Cat. No. 02CK1B \$1.16**

Spare Blades Large Pk 20 **Cat. No. 02CK20B \$3.20**



## BLOWPIPE

Nickel plated.  
200mm long

Cat. No. 41BP **\$5.10**

## BOSSHEAD, DIE-CAST



Diecast aluminium, fixed right angle V-grooves. Paddle screws for easy tightening.

Cat. No. 44BH **\$9.90**



## BOSSHEAD, ECONOMY

Made from zinc castings, very solid. Paddle screws for easy tightening.

Cat. No. 44BHE **\$6.50**

## BRUSHES

### Test Tube

### Brush



With fan tip,

275 x 16mm L & D

Small to fit test tube up to 16mm

Cat. No. 44TTBS **\$1.75**

Small to fit test tubes up to 16mm, best quality, extra stiff bristles, 220 x 16mm L & D

Cat. No. 44TTBSZ **\$3.80**

Large to fit test tube up to 30mm, 275 x 30mm L & D

Cat. No. 44TTBL **\$2.30**

Large to fit test tubes up to 30mm, best quality, extra stiff bristles, 220 x 16mm L & D

Cat. No. 44TTBLZ **\$4.00**

### Burette Brush

900mm length x 17mm dia

Cat. No. 44TTBB **\$3.00**

## BUNSEN BURNERS

Our top-selling Bunsen!

Nickel plated brass tube 18mm dia. with flame retention collar and captive air shutter. Enamelled base provides good stability with 10mm diameter side tube for gas hose.

High calorific output.

Accepts 8mm i.d. tubing.

These Bunsens have been tested by many chemistry teachers and found to be superior to other imported brands. No need to fiddle with and change jets as they work on 99% of school gas supplies with excellent results.



Manufactured in Australia to ISO9002 quality standards.

(Note: Only the collar type below are held in stock as they are most popular with schools.)

### Natural Gas

Collar type air adjustment

Cat. No. 44BBN1

### LPG

Collar type air adjustment

Cat. No. 44BBLP1

All above Bunsen Burners **\$23.00**

10+ **\$21.10**

Replacement barrel for Bunsen Burners

Cat. No. 44BBB **\$17.05**

## BUNSEN BURNER LIGHTER

Flint Gas Lighter Metal Cup Type with Replaceable Flint

Cat. No. 48FGL **\$5.05**

Flint Replacements pk/10 (for Cat. 48FGL)

Cat. No. 48FGR **\$29.05**

## BUNSEN BURNER MAT

290x290x4.8mm, hardboard

Cat. No. 44BBM30 **\$9.90**

20+ **\$8.85**

## BUNSEN TUBING, RUBBER

8mm i.d. To fit 44BBN1 & 44BBLP1 Bunsen Burners

(as above) Cat. No. 44BBT8 **\$3.90/m**

6mm i.d. To fit other manufacturers' Bunsen Burners

Cat. No. 44BBT6 **\$3.50/m**

## BURETTE CLAMP



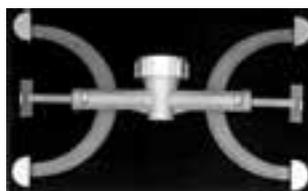
Fisher Type, Double, Metal. Made of strong die-cast metal. Easy adjustment with spring-loaded clips. Soft rubber pads hold burettes firmly in place. 250mm length.

Cat. No. 48BCM **\$19.00**



Fisher type, same as 48BCM above but single place holder.

Cat. No. 48BCMS **\$13.30**



Polyprop. double

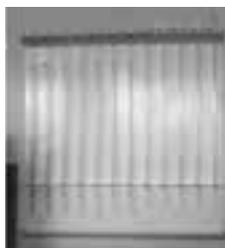
Cat. No. 48BC380 **\$9.00**



Polyprop. Single

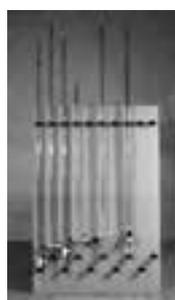
Cat. No. 48BC380S **\$6.80**

## BURETTE RACKS



NZ made, holds 12 burettes. White PVC with drain tray designed for wall fixing only. (wall screws not supplied)

Cat. No. 48BR **\$405.00**



Polypropylene, wall mount, holds ten burettes. Easily cleaned. No integrated drain tray. 40cm x 60cm.

Note: Burette does not fit in this rack.

Cat. No. 48BRS **\$65.00**

## BURNER, SPIRIT

### GLASS



Alcohol, glass, 120ml with metal cap.

Cat. No. 48AB150 **\$7.40**

Spare Wick, pack 10

Cat. No. 47W323 **\$5.80**

## CALCULATOR

### CASIO SCIENTIFIC

The FX82AUPLUS11 CASIO scientific calculator is the new and vastly upgraded model of New Zealand's most popular scientific calculator, featuring over 50 new or improved functions and NATURAL TEXTBOOK DISPLAY



- Natural Textbook display
- Meeting NCEA examination requirements
- Large, easy-to-read 10+2 digits dual line display
- Random Integer Functions
- Multiple intuitive ways to enter fractions
- List-Based data entry for statistics
- Combinations and permutations
- Approved surd and trig calculations
- Coordinate conversion
- AbExponential regression
- Multi-replay
- Protective hard case

#### Additional Functions

- Simplify
- Q1 / Q3 / med
- Verify
- Factorization into prime factor

Cat. No. 14FX82AU **\$19.60**

## CALIPER VERNIER DIGITAL

This is a high quality stainless steel precision instrument with a scale reading from 0 to 150 +/- 0.1mm. A

thumbwheel provides easy adjustment. Battery operated, ON/OFF, Zero and mm or inches selection. In plastic case with spare battery and instructions.



Cat. No. 48CVD **\$39.95**

## CENTRIFUGE

### Electric, Advanced.

(240/220V AC) 0 to 4000rpm, up to 12 x 20ml tubes. Digitally displayed speed and range. Automatic balance adjustment. Safety interlock lid prevents opening during operation.



Cat. No. 44CEA **\$620.00**

Centrifuge tubes, glass 10ml for 44CEA, Each

Cat. No. 44CEAT **\$3.75**

## CLAMP - RETORT

 Refer to Retort Clamp this section

## CLOCK, WALL

Easy to read, 250mm diameter with quartz movement. Large black numbers, black hands, classic ticking second hand. AA battery supplied, ready to go.



Ticking second hand

Cat. No. 04WC7 **\$11.60**

## WALL CLOCK WITH SILENT SWEEPING SECOND HAND

Round plastic wall clock with 250mm glass face. The second hand does not 'tick' but moves in a silent steady sweeping motion around the clock, perfect for exams!



Silent sweeping second hand

Suitable for schools, corporate environment and home office.

AA battery supplied, ready to go.

Cat. No. 04WC8G **\$23.70**

## COAT, LAB

### 100% Cotton Heavy Drill, Best Quality

Thick quality cotton drill coat (310GSM) with three pockets. Eight sizes.



Size 4 (XS)

Cat. No. 44LC4

Size 5 (S)

Cat. No. 44LC5

Size 6 (M)

Cat. No. 44LC6

Size 7 (L)

Cat. No. 44LC7

Size 8 (XL)

Cat. No. 44LC8

Size 9 (XXL)

Cat. No. 44LC9

Size 10 (XXXL)

Cat. No. 44LC10

Size 11 (XXXXL)

Cat. No. 44LC11

**ALL SIZES:** 1-9 **\$42.00**

10-29 **\$38.90**

30+ **\$35.50**

## CORK BORERS



Robust, nickel plated brass with rods. Set of 6 with plug removal rod. Range 4 to 11mm.

Cat. No. 48CB227 **\$34.00**

## CORK BORER SHARPENER



Cat. No. 48CBS

\$26.95

## COTTON WOOL

500g roll

Cat. No. 44CW

\$17.40

## COTTON BUDS

Plastic white 7.5cm. pk of 100

Cat. No. 48BC

\$2.00

## DATALOGGERS

Delta Educational Ltd. is pleased to offer to NZ schools the Sciencescope range of datalogging products. Proven in thousands of applications around the world, Sciencescope have been developing hardware and software for science education since 1982.

### Logbook ML

The Logbook ML with its built in sensors is a comprehensive datalogger for those who require the "out of the box" solution.

There are three in built sensors that include temperature, light and sound along with two additional DIN inputs for further sensors to be connected. The internal sensors and any additional sensors connected to the din input sockets will be immediately recognized and show the values in SI units on the LCD screen. Every logger comes with one single user license for the Datadisc Pt software which is downloadable.



### Specification

Logbook Features:

- Meter Mode displays sensor values in the appropriate scientific units for all channels
- Auto recognition of all Logbook sensors supplied by ScienceScope
- Recording Mode displays sensor values, recording status and allows the selection of Autoroll and snapshot recording types
- Fast Recording allows triggering on up to two channels and has a data-buffer built in. The buffer allows pre-trigger data to be logged of fast events, such as the current induced in a coil.

Included:

- Single copy of Logbook Graphing Secondary Software (download link for the 32 and 64 bit version will be included in the confirmation email)
- USB lead
- Temperature Probe

Cat. No. 44S1315 Unit Price: \$408.00

(contact us for class set pricing)

Master licence and software also required and sold separately. Cat. No. 44S1305 \$190.00

See the comprehensive range of sensors at [www.sciencescope.co.uk](http://www.sciencescope.co.uk)

## DEMINIMISER LABORATORY DEIONISER

The Permutit Deminimiser operates on the mixed bed ion exchange principle making highly purified water available at minimum cost for even the smallest requirements.

The Deminimiser is suitable for small scale users in laboratories, processing plants, hospitals, pharmacies, households, etc.

- Produces water far purer than distilled water.
- No installation costs, simply connect to tap.
- Fully portable.
- Clear throwaway cartridge.
- Resin colour change indicates remaining capacity.
- Compact.
- No power or batteries required.
- Flow rates up to 25 litres per hour.



### Resin Capacity:

The yield of deionised water is related to the dissolved solids content of the raw water. When the resin colour change (blue to brown) reaches the bottom a new cartridge is required.

### Example:

Dissolved solids = 70g/m<sup>3</sup>

Therefore output per cartridge = approximately 235 litres of deionised water.

Cartridge only

Cat. No. 48DC

\$162.00

Mounting Pack

Cat. No. 48DMP

\$49.50

## DEFLAGRATING SPOON



Standard pattern best quality with 80mm diameter disc, cup and cork stopper. Aluminium cap, iron cup, 380mm length. Made by IEC.

Cat. No. 48DS

\$9.90

Economy. 400mm long with cap.

Cat. No. 48DSE

\$3.20

Rubber Bung, Spare, for 48DSE

Cat. No. 48DSEB

\$0.50

## EXTENSION CORDS

### ELECTRICAL, 10amp

3m

Cat. No. 04EC3

\$6.40

5m

Cat. No. 04EC5

\$8.80

10m

Cat. No. 04EC10

\$14.80

## EYE-DROPPERS

Glass with rubber teat.

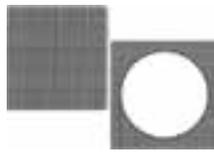
Pack of 10

Cat. No. 44ED

\$7.30

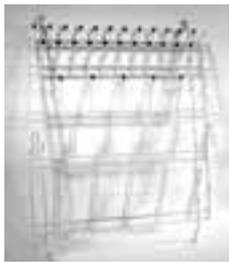


## GAUZE MATS STAINLESS STEEL



Plain – 125mm square	Cat. No. 44GMP125	\$1.85
Plain - 150mm square	Cat. No. 44GMP	\$2.70
Ceramic Centre - 125mm square	Cat. No. 44GMC125	\$2.10
Ceramic Centre - 150mm square	Cat. No. 44GMC	\$3.20

## GLASSWARE DRYING RACK

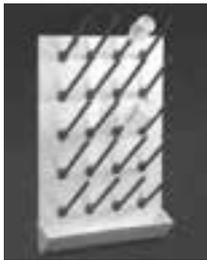


PVC Coated wire, wall mounted, 39 positions. Drying area 610 x 585 mm. Fixing points 780 x 500mm.

Cat. No. 44RDGW \$54.00

## DRAINING / DRYING RACK

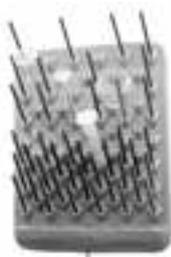
This draining rack provides an excellent option for post wash draining of tubes & bottles in the laboratory. The back plate has 20 holes into which pegs are fit with screw-nuts. The bottom of the rack has a tray which collects the waste water which can further be collected into a container via drain tube. This rack does not rot, stain or rust. Made of acrylonitrile butadiene styrene and polycarbonate. Dimensions 515x350x120 mm.



Cat. No. 44RDDP \$120.00

## DRAINING / DRYING RACK

Wall-mounted Drain / Drying rack for glassware with in-built drip tray and drain. Made of non-corrosive materials with 42 Removable Pegs, 72 Holes (spare plugs supplied), 150mm Long Pegs (standard supply). 620 X 490mm.



Cat. No. 44RDDT \$318.00

## GLASSWASH, PYRONEG

This famous pink concentrated powder is mildly alkaline and free-rinsing for pyrogen-free results. Pyroneg is a carefully formulated cleaning compound for the cleaning of laboratory glassware and also for the cleaning of surgical instruments, syringes and needles in operating theatres and surgical departments of hospitals. The best quality detergent at the best price!



Cat. No. 44PYR \$198.00

## GLASSWASH POWDER, SANI BRITE

**SANI BRITE** is a hard surface destainer and sanitiser designed especially for cutlery but also effective on glassware. It is a biodegradable hypochlorite based antibacterial powder for use in soaking or spray & wipe applications. It is stable, non-corrosive, freely soluble and contains a detergent for greater penetration and free rinsing from surfaces. Suitable for use wherever a cleaner/sanitiser is required. Not recommended for sanitising aluminium surfaces as dulling may occur. Dilution Rate: 3 - 12 g per 1 L of water. 4.5kg bucket.



Cat. No. 44SB \$116.00

## GLOBE

13cm Globe Political

Cat. No. 51GLS \$19.90

28cm Globe Political

Cat. No. 51GLL \$62.85



## HOT-HAND



Rubber single-hand 'glove' worn to protect against heat from hot vessels. Textured surface assures non-slip grip.

Cat. No. 44GHR \$13.20  
6+ \$11.85

## HOTPLATE, SINGLE

Quality basic Hotplate for general heating Stainless steel housing, die cast plate, thermostatic control and indicator light.



Cat. No. 44HPS \$86.00

### HOTPLATE IEC, Simmerstat

Hot Plate, general purpose laboratory hot plate, 240V AC, 600W. Rectangular 200x180mm plate area, with high temperature alloy plate for even plate temperature. 'Simmerstat' temperature control provides heat adjustment from zero to full over a scale from 1 to 10. At the setting of 10, maximum plate temperature is approx 450deg.C. Ideal for general laboratory use.



Cat. No. 41HPSC **\$380.00**

### HOTPLATE IEC, Thermostat



General purpose laboratory hot plate, 240V.AC. 600 watts. Rectangular 200x180mm area, with high temperature alloy plate for even plate temperature. Thermostat temperature control provides heat adjustment from 50 to 320 degrees over a scale from 1 to 10. Ideal for general laboratory use.

Cat. No. 41HPS22 **\$450.00**

### HOTPLATE STIRRER, IEC



#### With simmerstat control

Combined unit has features of both the hotplates and magnetic stirrers. Heating and stirring can operate together and are separately controlled.

Cat. No. 41HPS29 **\$412.00**

### WATER BATH, FOR USE WITH IEC HOT PLATES



A useful Water Bath that is powered by an IEC Hot Plate. Test tube stands can fit so biological work is low cost and convenient. The ends of the bath slide down to rest on the work bench for a stable support but also slide up to provide the

smallest size for storage. The bath can be used also as a dry oven.

A Thermostat Control (44WBHPT) fits to the edge of the bath to control the Hot Plate so the water temperature is held constant. This control is purchased separately.

For an approximate temperature control, the careful adjustment of the heat regulator of the Hot Plate can keep the water bath reasonably steady but not as regulated and accurate as with the Thermostat Control. See page 47 for Test Tube Racks to fit.

Cat. No. 44WBHP **\$315.00**

Cat. No. 44WBHPT **\$225.00**

### HYGROMETER MASON'S

Red spirit plastic type with calibrations -50°C to +50°C

Cat. No. 48HM191 **\$15.40**

### LENS TISSUE

150 x 100mm pad/50 leaves. For cleaning all optical lenses

Cat. No. 48LP120 **\$2.90**

### LIGHT, ULTRAVIOLET

Ultraviolet lamp, blacklight, long and short wave.



Size: 195 x 100 x 42mm

Cat. No. 43UVL **\$334.00**

Optional AC Power Supply

Cat. No. 44CLA **\$44.85**

### MAGNETIC FLEAS / STIRBARS

Teflon-coated with pivot.



15mm	Cat. No. 41HPF15	<b>\$4.20</b>
20mm	Cat. No. 41HPF20	<b>\$5.20</b>
25mm	Cat. No. 41HPF25	<b>\$5.90</b>
41mm	Cat. No. 41HPF41	<b>\$7.20</b>
60mm	Cat. No. 41HPF60	<b>\$11.60</b>

### MAGNETIC STIRRER

#### Variable Speed

- Height from bench: 100 mm
- Plate dimensions: 200 x 180 mm (1xw)
- 220/240 V.AC. 50/60Hz

Compact housing, good stability and controls are well spaced, easy to use and are recessed

for protection from both mechanical damage and from spillage. The 'Alnico' magnet is driven by a powerful brushless motor with smoothly variable electronic speed control providing slow speed for titration work. The large pressure die cast top plate is machined flat and epoxy coated for protection against corrosion (PTFE coated plate optional).



Cat. No. 41SM281 **\$444.00**

## MAGNETIC STRIP

13mm x 1 m roll with self adhesive backing

Cat. No. 02MS

**\$3.60**

## MAGNIFIER WITH LAMP

This handy magnifier has a lens mounted on a stand and comes complete with a built-in lamp powered by 2x 1.5V 'AA' batteries (not included). 360 degree screw lock design puts lens and light where you need it. Convenient thumb operated switch for illumination and each lens has a useful high-magnification bubble. Can be used either hand held or hands free. Available in two sizes:



90mm: Cat. No. 48ML90 **\$14.00**

110mm: Cat. No. 48ML110 **\$18.50**

## MAGNIFIER

Hand-held with shatterproof acrylic lens, ebony frame, 75 mm diameter.



75mm diameter Cat. No. 48M7009 **\$3.20**

100mm diameter Cat. No. 48M7100 **\$4.20**

## MAGNIFIER

Known for quality the 72mm hand-held Waltex Magnifier with additional spot lens provides 2x/4x Magnification. Strong rugged plastic handle moulded onto the lens.



Cat. No. 48M6418 **\$7.50**

## MAGNIFIER POCKET



A top quality 21mm lens, 10x magnification, folding pocket magnifier, with case.

Cat. No. 48MAG **\$3.80**

## MASS SET, METRIC



Total 505g comprising x1 200g, 2x 100g, 1x 50g, 1x 20g, 2x 10g, 2x 5g, 2x 2g, 1x 1g. In box, nickel-plated brass.

Cat. No. 44MSM **\$70.00**



## METER, LIGHT, MOISTURE, pH

Basic analogue type with 210mm dualprobes. Great for field trips, projects, greenhouse etc.

Cat. No. 48MLMPH **\$25.00**

## MINERAL SET (A.S.E.P.)

Refer Rock Sets this section.

## OCEAN FLOOR - RAISED RELIEF MAP

This map of the World captures the geography of the land and ocean floor. Ridges, trenches, mountains, continental shelves, continental slopes and islands are depicted. Teacher's guide included with activities on making an ocean floor profile, continental margin types, earthquake and volcano distribution. 66x 99 cm



Cat. No. 530FRM **\$86.50**

## PARAFILM

Roll, 10 x 3800 cm.



Cat. No. 48PAR4 **\$71.00**

## PHOTOSENSITIVE PAPER

SunArt paper is coated with light-sensitive chemicals, which react when exposed to light. When you place objects on the paper, they block the light and the paper underneath them turns white while the paper around them remains blue. Water stops the process and fixes the images on the paper. Learn about the nature of sunlight and how light-sensitive chemicals work.



SunArt Paper Kit, 4x6 inches, 15 sheets

Cat. No. 43SAP46 **\$12.95**

SunArt Paper Kit, 5x7 inches, 15 sheets

Cat. No. 43SAP57 **\$19.95**

SunArt Paper Kit, x10 inches, 15 sheets

Cat. No. 43SAP810 **\$26.95**

## PIPETTE FILLERS



Rubber 3-valve type

Cat. No. 48PFR **\$13.60**

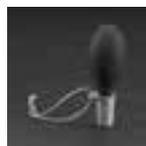


Rubber, pear-shaped, no valves, simple type, 25ml.

Cat. No. 48PFB 1-19: **\$5.60**

20+: **\$4.75**

(48PFB shown attached to pipette)



Universal safety pipette filler, rubber bulb, no valves.

Cat. No. 48PFV **15.30**

### PIPETTE PUMP (PI-PUMP)



10ml capacity.

Cat. No. 48PPG **\$14.60**

25ml capacity.

Cat. No. 48PP **\$15.30**

Spare Chuck (bottom rubber seal that pipette fits into) Fits all sizes.

Cat. No. 48PPC **\$4.00**

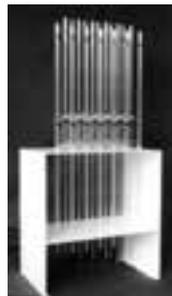
Spare Seals, internal, set/3

Cat. No. 48PPS **\$2.95**

White Collar for 25ml Pi Pump

Cat. No. 48PPCO **\$1.60**

### PIPETTE STANDS



For Volumetric Pipettes. Holds 32 Volumetric Pipettes. Metal, Powdercoated.

Cat. No. 48PSM

**\$57.60**



A-Frame, 12-place. Sturdy, plastic coated metal rods support frame and add stability.

Cat. No. 48RP

**\$12.00**

### PIPE CLAY TRIANGLES



50mm sides. Pack of 10.

Cat. No. 48PCT **\$11.00**

### POSTERS

Earth's Annual Revolution

Cat. No. 50C23 **\$52.00**

Minerals of the World

Cat. No. 50C3 **\$29.70**

The Atom (Safari)

Cat. No. 50C26 **\$20.00**

The Volcano

Cat. No. 50C24 **\$30.00**

### BOTANY POSTERS

Chart-Roots (Structure) 52x76cm

Cat. No. 50RS **\$16.20**

Chart-Seed Dispersal 52x76cm

Cat. No. 50SD **\$16.20**

Seed Formation Poster 52x76cm

Cat. No. 50SF **\$16.20**

Chart-Germination 52x76cm

Cat. No. 50SG **\$16.20**

Chart-Stems (Mono & Dicot) 52x76cm

Cat. No. 50ST **\$16.20**

### POWERBOX



Includes overload protection

4 Way Cat. No. 04PB4 **\$6.40**

6 Way Cat. No. 04PB6 **\$8.00**

### PUMP, FILTER (VACUUM)



Water Jet Vacuum with non return valve. Australian made. All brass construction, 105mm long. Efficient design produces a high vacuum with low water consumption, or at poor water pressure. Inbuilt non return valve prevents water suck-back. Nickel plated finish.

Cat. No. 41PF1582 **\$52.00**

5+ **\$46.80**

### PUMP, VACUUM



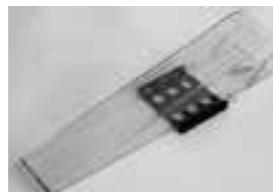
Electric, vacuum. Displacement 1 litre/sec; Vacuum limit 0.04Atm; speed 1400 r.p.m. Oil-filled with carry handle and gauge. 7.3kg.

Cat. No. 45VPE **\$580.00**

### RAIN GAUGE

Ground mounted, with spike, plastic, graduated cone on ground spike. Measures up to 50mm rainfall.

Cat. No. 44RG **\$20.00**



Post-mounted, Wedge shape, removable from mount bracket, 150 x 1mm

Cat. No. 44RGP **\$28.00**

### RETORT RING

Steel, 50mm diameter with bosshead.

Cat. No. 48RR50 **\$7.50**

75mm dia. with bosshead.

Cat. No. 48RR75 **\$8.00**



### RETORT STANDS

210 x 135 mm base with 590 x 11mm nickel plated steel rod, 1.3kg.

Cat. No.48RS200 **\$22.95**

Retort stand, blue base w/rubber feet, 200 x 125mm, 600 x 12.5mm rod, 1.7kg.

Cat. No.48RS **\$24.30**

Heavy Duty, Blue Base w/Rubber feet 250x160mm with 750x12mm rod, 2.5kg.

Cat. No.48RSH **\$38.00**

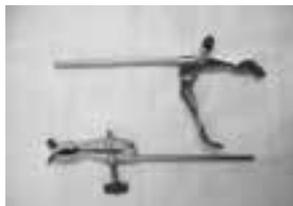


## RETORT CLAMPS



Die-cast alloy with four cork-lined jaws on 8mm rod.

Cat. No. 48RC \$10.00



Robust Retort Clamp with nickel plated steel handle and screw, plastic knob for sure grip and nickel plated zinc prongs with cork lined fingers.

Cat. No. 48RCM \$12.25



Aluminium and Plastic, 3-prong, vinyl-lined jaws.

Cat. No. 48RCVE \$9.90



Aluminium Retort Clamp with 3 Rubber Covered Prongs; additional pin on rod added for strength. 85mm maximum opening.

Cat. No. 48RCV \$11.25

## ROCK SETS

Rock Set Igneous Jr, Set/15 25x25mm

Cat. No. 48RSIJR \$68.00

Rock Set Metamorphic Jr, Set/15 25x25mm

Cat. No. 48RSMJR \$66.00

Rock Set Sedimentary Jr, Set/15 25x25mm

Cat. No. 48RSSJR \$71.30

Rock Set, General, 50 specimens, 25x25mm

Cat. No. 48RSG \$160.00

Rock Set, Introductory Mineral, 30 specimens, 50x30mm

Cat. No. 48RSIM \$82.00

Rock Set, Mohs Scale of Hardness

Cat. No. 48RSMS \$44.25

Mineral Set, A.S.E.P.

Cat. No. 48MS \$62.75

Rock Sample, Magnetite, 3-4cm, pk/10.

Cat. No. 48RSMA2 \$39.60

Rock Sample Obsidian 25mm pk/10

Cat. No. 48RSO \$32.80

.... many others available

## RULER METRE, GROOVED

1 metre wooden track with groove.



Cat. No. 13NT100 \$6.50

10+ \$5.90

1 metre wooden rule without groove.

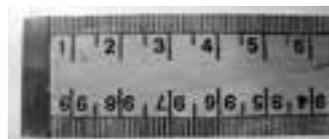


Cat. No. 13MR1 \$4.50

10+ \$4.20

## RULER METRE WITH BRASS ENDS

Made from hardwood and coated. Both edges in cm and mm. Brass ends prevent chipping and splitting.



Cat. No. 13MRB \$8.25

10+ \$7.50

## SAM LABS

What is SAM? Sam is the way forward for teaching Science, Technology, Engineering, Art and Mathematics (STEAM). SAM is a smart construction kit utilising blocks that connect wirelessly to the SAM App while learning about Data capture, programming logic and more. Students create awesome inventions. Who is it for?...for Science and Technology classrooms, young inventors and not-so-young inventors! Check out the amazing PROJECT videos at <https://www.samlabs.com/>. Free downloadable lesson plans (25+) and supporting materials are available, created for educators by educators. SAM Labs Education is an official partner with Microsoft Education.

NEW Product

## SAM'S STEAM KIT

This is the ultimate starter kit to bring SAM into your classroom. Conveniently packed in a Grannells SmartCase.

CONTENTS:

Steam kit Curriculum-based (UK) STEAM projects and lesson plans

SAM Space Education app tailored for teachers

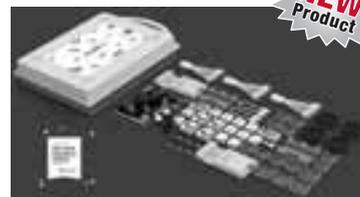
40+ SAM software blocks

Integrates with Lego®

Hands-on educator support

Easily adapts into homework

Cat. No. 44SMSK \$875.00



NEW Product

GENERAL LABORATORY

## SAM'S CURIOUS CARS KIT

Have fun building and programming your own cars and games. Download the Curious Cars app to program your car and play games in the SAM Arcade. Create your own inventions in the SAM Space app using your imagination, SAM blocks, and the handy Book of Crazy Cool Ideas! Play with the exclusive game app. Create projects on the SAM Space app. Fits LEGO®.

CONTENTS:

6 rechargeable SAM blocks

1 car base and 1 controller

5 car designs

20+ starter projects

Easy wireless set-up

Cat. No.44SMCC \$385.00



NEW Product

## SCALE, WEIGH-IN

### Basic Scale

Easy to read full view dial (12.7cm diameter) with large spacious platform for generous foot room. 136 kg capacity, 1kg divisions. Divisions in Kg and Stones



Cat. No. 06N148 **\$69.00**

### Deluxe Weigh-in Scale

This stylish retro scale will accurately measure weight with plenty of room for positioning the feet. Suitable for up to size 12 feet, it is very stable with a durable non-slip textured mat and is easy to read. Features both pound and kilo measurements with fine resolution scale for higher accuracy. Powder coated steel base and a hard wearing durable vinyl mat. Dimensions: L46.5 x W33.5 x H11.5cm, Maximum User Weight: 150kg / 23st 8lb. Guarantee: 1 Year



Cat. No. 06N200 **\$206.00**

## SCISSORS

### Quality Stainless Steel Scissors Craft Scissors

130mm

Cat. No. 02CS4

1 - 23

**\$2.15**

24+

**\$1.80**



### General Purpose Scissors

200mm

Cat. No. 02GPS8

1-23

**\$3.80**

24+

**\$3.20**



## SHARPS BIN

For disposal of sharp/contaminated items. Bright yellow.

7.8 litre.

Cat. No. 44SB5

**\$21.00**

## SLOTTED MASSES, CHROME-PLATED BRASS



9 X 100g masses plus hook & 6mm carrier. Total weight 1000g.

Cat. No. 44SM1000 **\$54.80**

9 X 50g masses plus hook & 6mm carrier. Total weight 500g.

Cat. No. 44SM500 **\$38.50**

9 X 20g masses plus hook & 3mm carrier. Total weight 200g.

\*Cat. No. 44SM200 **\$21.10**

9 X 10g masses plus hook and 3mm carrier. Total weight 100g

\*Cat. No. 44SM100 **\$18.00**

(\* Masses and carriers interchangeable)

## SPARE SLOTTED MASSES

Mass, slotted, brass, 50g:

To fit 5mm carrier, pk/10 Cat. No. 44SM500WT **\$40.75**

To fit 6mm carrier, pk/ 9 Cat. No. 44SM500WT6 **\$30.00**



Mass, slotted, brass, 20g, pk 9:

To fit 4mm carriers. Cat. No. 44SM200WT **\$17.60**

To fit 3mm carriers. Cat. No. 44SM200WT3 **\$17.60**

Mass, slotted, brass, 100g, pk/9:

To fit 6mm carrier Cat. No. 44SM1000WT **\$50.50**

## SPARE CARRIERS



Carrier only w/hook for 50g masses:

5mm spindle Cat. No. 44SMC500 **\$6.80**

6mm spindle Cat. No. 44SMC5006 **\$6.80**

Carrier only w/hook for 20g masses:

4mm spindle Cat. No. 44SMC200 **\$5.50**

3mm spindle Cat. No. 44SMC2003 **\$5.50**

Carrier only w/hook for 100g masses

6mm spindle Cat. No. 44SMC1000 **\$10.00**

## SPATULAS

Stainless steel, bent end. 170 mm.

Cat. No. 44S175

**\$2.50**



Stainless steel, spoon and flat, 150 mm.

Cat. No. 44SS150

**\$2.80**



Polypropylene, 2 flat,

Nuffield type, stainless steel, 140mm.

Cat. No. 44SNFD

**\$3.40**



## SPATULA WOODEN

"Ice Block Stick"

Non-sterile, pack 1000, 113 X 12mm.

Cat. No. 48SPW

**\$15.80**



## SPLINTS, WOODEN



Pack of 100

Cat. No. 48SPL

**\$3.80**

Pack of 500

Cat. No. 48SPLD

**\$14.00**

## STILL WATER

Model Merit W4000 – Key Features:

- Glass construction with long life metal heating element
- Two independent safety thermostats
- Wall mountable

The Merit is the ideal choice for budget conscious labs that can't afford to compromise on quality. It combines economy and high performance with a host of other features which comparable stills cannot match.



Built in acid addition funnel and drain stopcock allow easy de-scaling without dismantling the glassware.

The unique condenser design ensures that the droplets of distilled water remain in contact with the cooling coil for the longest possible time producing cold distilled water and pre-heating the boiler feed to increase efficiency.

Screw threads are incorporated on all water connections so hoses can be fitted and removed easily and safely without risk of breakage. Safety features include two independent safety thermostats to prevent over heating in the event of failure of the water supply.

The stand is pre-drilled to facilitate wall mounting.

Cat. No. 44STILL **\$2,565.00**

## STIRRING RODS

**PVC, Chemical & heat resistant**

8 x 245 mm **Cat. No. 44SR250 \$1.80**  
10+ **\$1.60**

**GLASS 7 x 200 mm. Pack of 10.**  
**Cat. No. 44SRG \$13.40**

**GLASS, Large for Batch Stirring**  
Glass rod, 500mm length x 10mm diameter, with a ground bevelled edge.

**Cat. No. 44SRGL \$16.00**

**STIRBARS Refer Magnetic Fleas**

## STOPPERS, RUBBER

Large selection available, size listed is diameter at base of stopper.



Diameter(mm)

Bottom	Top	Holes	Cat No.	Price
9		0	47RSS9	\$0.40
9	13	1	47RSH9	\$0.40
11	14	0	47RSS11	\$0.40
11	14	1	47RSH11	\$0.40
12	15	0	47RSS12	\$0.50
12	15	1	47RSH12	\$0.50
13	16	0	47RSS13	\$0.40
13	16	1	47RSH13	\$0.67

15	21	0	47RSS15	\$0.40
15	21	1	47RSH15	\$0.71
15	21	2	47RS215	\$0.76
16	19.5	0	47RSS16	\$0.80
16	19.5	1	47RSH16	\$0.80
17	22	0	47RSS17	\$0.76
17	22	1	47RSH17	\$0.76
20	24	0	47RSS20	\$0.76
20	25	1	47RSH20	\$0.76
20	25	2	47RS220	\$0.70
22	28	0	47RSS21	\$0.98
22	29	1	47RSH21	\$0.80
22	29	2	47RS221	\$0.98
24	29	0	47RSS24	\$1.20
24	29	1	47RSH24	\$1.35
24	26	2	47RS224	\$0.98
26	30	0	47RSS26	\$1.20
26	29	1	47RSH26	\$1.20
26	29	2	47RS226	\$1.20
30	34	0	47RSS30	\$1.50
30	34	1	47RSH30	\$1.50
30	34	2	47RS230	\$1.50
32	41	0	47RSS32	\$1.50
32	41	1	47RSH32	\$1.55
32	39	2	47RS232	\$1.50
38	42	0	47RSS38	\$2.25
38	42	1	47RSH38	\$2.50

## STOPWATCH, SINGLE FUNCTION, LARGE DISPLAY

Say goodbye to students setting off alarms during class and wasting time playing with other functions! THIS STOPWATCH HAS A TIMING FUNCTION ONLY.



**Cat. No. 06SWTF308 1-9 \$17.00**  
10+ **\$14.00**

Spare Battery for 44SSF:

**Cat. No. 04LR44 \$2.60**

## STOPWATCH, STANDARD, LARGE DISPLAY

Easy to read and a must for all sporting, technical applications and for general use.

Complete with battery.

- 1/100th second
- Split / Lap time
- 12/24 hour clock - Hourly chime and alarm
- Hour, Minute, Second, Month, Date, Day and Auto Calendar
- Easy to operate.
- Size: 71.0 x 64.0 x 16.0 mm



**Cat. No. 06SWTF307 1-9 \$12.00**

10+ **\$9.60**

Replacement battery

**Cat. No. 04LR44 \$2.60**

## STOPWATCH STORAGE

The Gratnell F1 tray with stopwatch insert makes reconciliation easy at a glance! Trays available in 6 colours (R,B,G,Y, PL, LG, CB); choose code accordingly). 44GFIS holds 3 x 10 rows of stopwatches but without a lid. 44GFIS2 holds 2 x 10 rows of stopwatches with 01LF1 lid.

F1 Tray, shallow, 75mm	<b>Cat. No. 01F1R(B/G/Y)</b>	<b>\$7.80</b>
Clip-on Lid	<b>Cat. No. 01LF1</b>	<b>\$6.00</b>
Foam Stopwatch Insert	<b>Cat. No. 44GFIS</b>	<b>\$12.95</b>
Foam Stopwatch Insert	<b>Cat. No. 44GFIS2</b>	<b>\$12.95</b>



(For other great Gratnell Storage ideas see TROLLEYS, GRATNELL in the General Laboratory Section.)

## STREAK PLATES

These white Streak Plates 1" x 2" made of unglazed Porcelain are ideal for streak testing of minerals. pk/10.



**Cat. No. 48SP** **\$32.00**



## SYRINGES Disposable

5 ml plastic	<b>Cat. No. 44SYR5</b>	<b>\$0.35</b>
10 ml plastic	<b>Cat. No. 44SYR10</b>	<b>\$0.70</b>
20 ml plastic	<b>Cat. No. 44SYR20</b>	<b>\$0.80</b>
60 ml plastic	<b>Cat. No. 44SYR60</b>	<b>\$2.60</b>

**Glass, Gas** Fine ground barrel. 100 ml.

**Cat. No. 44GGS** **\$49.50**

**PVC Tubing** (3.2mm I.D.)

To fit plastic syringes, per metre **Cat. No. 44PVC3** **\$1.00/m**

## TAPE , MEASURING



13mm wide Fibreglass Tape.

30 Metre Tape	<b>Cat. No. 06OTR30</b>	<b>\$18.00</b>
50 Metre Tape	<b>Cat. No. 06OTR50</b>	<b>\$24.00</b>
100 Metre Tape	<b>Cat. No. 06OTR100</b>	<b>\$49.80</b>

## TEST TUBE BRUSHES

See Brushes

## TEST TUBE HOLDER

To hold tubes 16 x 25mm diameter.



Nickel plated steel.

**Cat. No. 44TTH** **\$2.00**



Wooden Peg Type,  
pk/10.

**Cat. No. 44TTHW**  
**\$24.00**

## THERMOMETER, DIGITAL

Digital water-proof Brannan thermometer, 115mm stem, Range -40 degrees to 250 degrees C. Complete with pocket-clip sheath, Calibration and hold functions, Max / Min memory, IPX7 rated (dishwasher safe to 88°C)



**Cat. No. 44TDS** **\$39.50**

## THERMOMETER

Environmentally safe brown spirit in glass, 10° to 360°C +/-2°C, 300mm. Good general laboratory thermometer and for year 12 fractional distillation of oil mixture. Brannan (U.K.)

**Cat. No. 44TS360B** **\$14.00**



## THERMOMETER

### GREEN FILL

This glass thermometer is filled with a harmless green fluid and responds quickly, having a temperature range of -20°C to 110°C. It is calibrated for partial immersion to 76 mm. Length 305mm.



**Cat. No. 44TGF** **\$4.30**

TOTAL IMMERSION. Length 150mm.

**Cat. No. 44TGF150** **\$3.80**

## THERMOMETER, RED SPIRIT

Yellow enamelled back filled with red spirit. Supplied with top loop fitting. Diameter 6mm. Graduated and supplied in case. Range: -10 to 110, +/-1deg C. 300mm length.



**Cat. No. 44TRS** **\$3.80**

## INFRARED THERMOMETER

A handheld mini infrared thermometer with time-keeping function, providing easy and safe temperature measurement when non-contact access is required.

Range: -33 to 220 C&F

Emissivity: 0.95 (fixed)

Dimensions: 71 x 47 x 17mm

LCD Dimensions: 22 x 13mm

Battery Included.



**Cat. No. 44IRT** **\$58.00**

## THERMOMETER, MIN - MAX



Mercury filled. For recording maximum and minimum temperatures. Has push button reset.

Cat. No. 44TH538 **\$15.40**

## TONGS



Beaker, 240mm, vinyl coating

Cat. No. 44BT240 **\$12.80**



Crucible, 200mm, S.S.

Cat. No. 44CT200 **\$6.70**



## THERMOMETER HOLDER

Clip type for holding Thermometer to the side of a beaker. Stainless steel.

Cat. No. 48TH **\$10.95**

### Retort clamp type



Provides a convenient bosshead clamping system for holding a thermometer on a retort stand. The barrel swivels adjustably and locks to hold thermometer on any angle.

Cat. No. 48TC **\$8.80**

## THERMOMETER STORAGE RACKS



### UPRIGHT STORAGE

Blue electrogalv zinc-coated metal Z-shaped thermometer rack with cushioned bulb rest. This unique rack is designed to hold 12 spirit filled thermometers to accommodate students working in groups of four.

Cat. No. 48TSRSS **\$15.50**

## DUAL PURPOSE TRAY

This Thermometer / Magnet Dual Purpose Storage Tray helps you to keep costs down! Made from washable ABS plastic this durable tray is designed for versatility. Holds 10 x 305mm Thermometers or x 10 pairs of 50/75 mm length x 15x10mm Bar Magnets with keepers.



Cat. No. 48DPT **\$22.00**

## TIMER

### Count Down or up

The ideal timer for the science lab. Count down or up by 1 second intervals. Big buttons, memory function, loud Beeper, magnetic or self standing.



Cat. No. 06Y1023 **\$26.40**

## TORCH



This Torch is a compact white light source that doesn't need replacement lamps. It has a super bright LED source and takes x1 AA battery (included).

Cat. No. 48T **\$8.00**

## TOTE TRAYS

Handy plastic trays measure:  
Shallow 397 x 271 x 75 mm.  
Deep 397 x 271 x 150 mm.



Suitable for most tote tray trolleys

(ALSO SEE GRATNELL TRAYS THIS SECTION)

**NOTE: Tote trays are Not compatible with GrateNells storage products.**

Shallow, grey	Cat. No. 01TT2	<b>\$6.80</b>
Deep, grey.	Cat. No. 01TT6	<b>\$8.60</b>
Shallow, red.	Cat. No. 01TTR2	<b>\$8.40</b>
Shallow, blue.	Cat. No. 01TTB2	<b>\$8.40</b>
Deep, red.	Cat. No. 01TTR6	<b>\$8.60</b>
Deep, blue.	Cat. No. 01TTB6	<b>\$8.60</b>

## METAL MOBILE TOTE TROLLEY



Cat. No. 01MT12 600 x 550 x 720h **\$265.00**

Holds 12 shallow tote trays (75mm)

Cat. No. 01MT24 955 x 550 x 720h **\$356.00**

Holds 24 shallow tote trays (75mm)

Cat. No. 01MT36 1355 x 550 x 720h **\$448.00**

Holds 36 shallow tote trays (75mm)

PRICES EXCLUDE TOTE TRAYS

**NEW  
LOW  
PRICES**

## TROLLEYS & FRAMES – GRATNELLS SCIENCE STORAGE SYSTEM

The Gratnells Tray Storage System is based on the patented slotting of square steel tube to take nylon-coated adjustable steel tray runners and shelf clips. Frames and trolleys are constructed of 25mm sturdy 18 gauge square steel tube with slots at 25mm intervals allowing the flexible positioning of four available tray sizes. Supplied flat-packed to reduce freight costs. Instruction leaflet included. Easy assembly with a flat-head screwdriver.

A selection of Gratnells Trolleys and Frames follows. For the entire range, ask for a copy of the Gratnells brochure.

### To configure your trolley or frame:

#### Step 1:

Select a trolley or frame. (For UNDER BENCH Trolleys, be sure to measure available height!)

#### Step 2:

Choose your trays. (Note that the depths of each tray increase by 75mm; ie, x1 F2 tray = x2 F1 trays, one F25 = x3 F1 trays, x1 F3 = x4 F1 trays).

#### Step 3:

Select any desired inserts.

#### Step 4:

Select a pair of Cat. No. 44G3 Steel runners for each tray position. Example: 24 trays total = 24 pairs of G3 runners.

#### Step 5:

Add up the individual prices. Or contact us to assist with your configuration and quotation.

## TROLLEYS, GRATNELLS

The Gratnells trolleys can neatly store and move about all sorts of Science equipment efficiently and conveniently. They are designed for rugged Educational use and are fitted with heavy duty 75mm castors into solid steel blocks for extra strength. The recessed tops are removable with open corners for easy cleaning. Available in two heights, the 725mm trolleys fit neatly under and the 850mm trolleys are level with most standard benches. Grey colour is stocked; white or beige also available on request (back order).

All trolleys and frames are 420mm deep, width is 355mm for single column, 710mm for double column and 1055mm for triple column .

### NOTE:

**Prices below are for trolley frame only and do not include 44G3 runners or trays as pictured. For multiple trolleys, frames and trays, ask for our quotation.**



#### Single-Tier Trolley

Level with bench,  
H 850 x W 370 x D 420mm  
Price for frame only:

**Cat. No. 44G1025 \$298.00**



#### Single-Tier Trolley

Under bench,  
H 725 x W 370 x D 420mm  
Price for frame only:

**Cat. No. 44G1025U \$298.00**



#### 2 -Tier Trolley

Level with bench,  
H 850 x W 710 x D 420mm  
Price for frame only:

**Cat. No. 44G2025 \$422.00**



#### 2 -Tier Trolley

Under bench,  
H 725 x W 710 x D 420mm  
Price for frame only:

**Cat. No. 44G2025U \$422.00**



#### 3 -Tier Trolley

Level with bench,  
H 850 x W 1055 x D 420mm  
Price for frame only:

**Cat. No. 44G3025 \$495.00**



#### 3 -Tier Trolley

Under bench,  
H 725 x W1055 x D 420mm  
Price for frame only:

**Cat. No. 44G3025U \$495.00**

## TREBLE COMBINATION TROLLEY

A versatile trolley for those instances where the needs demand equipment in trays as well as large items. **Trays, Cat. 44G362 shelves and Cat. 44G3 runners are sold separately as per your desired configuration.**



Level with bench, H850 x W1055 x D420mm.

**Price for frame only. Cat. No. 44G3020 \$454.00**

Under bench, H725 x W1055 x D420mm.

**Price for frame only: Cat. No. 44G3020U \$454.00**

Shelf with clips, each **Cat. No. 44G362 \$56.00**



## GRATNELLS 'CALLERO PLUS' TROLLEYS

'Callero Plus' is Gratnells' new range for School science storage. These attractive trolleys have 33% more storage space than the standard trolleys, a handle at both ends for better manoeuvrability and larger 75mm castors (with brakes) for added stability. Callero Plus trolleys feature a new enclosed metal framing, which reduces the need for cleaning as well as offering enhanced security. They are available in treble or double width with a durable silver finish and are offered in a selection of pre-configured tray sizes to suit your requirements. Supplied with the new StopSafe runners for added safety, Callero Plus is ideal for transporting your science equipment between classroom and Prep Room. As prices below INCLUDE the trolley, StopSafe runners and the trays, all you do is choose the tray colours!

### Treble width 'Callero Plus' Trolleys

- Height 885mm (1055mm with handle),  
Width 1020mm, Depth 435mm configured with...



24 x F1 shallow trays in your choice of colours:

**Cat. No. 44GCT3 \$870.00**



12 x F2 deep trays in your choice of colours:

**Cat. No. 44GCT7 \$758.00**



16 x F1 shallow + 4 x F2 deep trays in your choice of colours:

**Cat. No. 44GCT17 \$780.00**

### Double width 'Callero Plus' Trolleys

- Height 885mm (1055mm with handle),  
Width 690mm, Depth 435mm configured with...



16 x F1 shallow trays in your choice of colours:

**Cat. No. 44GCT5 \$735.00**



8 x F2 deep trays in your choice of colours:

**Cat. No. 44GCT13 \$675.00**



8 x F1 shallow + 4x F2 trays in your choice of colours:

**Cat. No. 44GCT18 \$688.00**



## GRATNELLS ROVER



Tough and practical, the Gratnells Rover has been designed to carry trays over any terrain and help you move heavy loads around with ease. Whether you need to take beanbags and bottled water to the field on sports day or Science equipment to a class, the Rover is ideal for transporting anything you need, even up and down stairs. (1170 X 560 X 760mm HxWxD)

The Gratnells Rover is a heavy

duty metal trolley with pneumatic tyres, runners to hold Gratnells trays or SmartCases and a strap to secure your trays for transportation.

- Stylish curved silver frame
- 260mm pneumatic tyres for all terrains
- Five sets of runners allow a variety of possible tray combinations
- Strap to secure the trays and contents
- Supplied part assembled, some assembly required.
- Order trays separately

**Cat. No. 44GROV \$418.00**

## SmartCase

The SmartCase® is everything you'd expect from a Gratnells tray. It's built for heavy educational handling and fits into the same runners used on all the frames and trolleys. But the SmartCase isn't just another tray. Thanks to its moulded handle, you can carry it around with you wherever you need to go, just like a briefcase. So now, when it comes to items that you need to keep safe in the classroom and outside, you've got the perfect answer to mobile storage. Comes with convoluted foam (egg-crate foam) top and an optional configurable Divider Set to create multiple compartments. 80 x 427 x 312mm. SmartCase® is available in the following colours:



Apple green **Cat. No. 44GSCG \$25.00**

Cyan blue **Cat. No. 44GSCB \$25.00**

Tomato red **Cat. No. 44GSCR \$25.00**

Sunshine yellow **Cat. No. 44GSCY \$25.00**



**Divider Set to create up to 18 compartments for small items**

**Cat. No. 44GSCDS \$10.80**

## INSERTS

Foam Inserts for trays allow snug storage, reducing breakage and facilitating reconciliation at a glance. Although these foam inserts have been designed with a specific storage purpose in mind, quite often they find use in storing many other items! Vacuum formed (v/f) inserts are great for storing like objects in groups (eg, Molecular models).

### Inserts for F1 Trays:



Foam insert, fits x30 of our Stopwatches (06SW216 or 44SSF) in an F1 tray without a lid or in an F2 tray with a lid.

**Cat. No. 44GFIS \$12.95**



Foam insert, fits x20 of our Stopwatches (06SW216 or 44SSF) in an F1 tray with lid.

**Cat. No. 44GFIS2 \$12.95**



Foam insert, fits x15 of our Stopwatches (06SW216 or 44SSF) in an F1 tray with lid.

**Cat. No. 01FC2380 \$12.95**



Foam insert, fits x30 bottles 40-45mm diameter. Fits in an F1 tray without lid or F2 tray with a lid.

**Cat. No. 44GFIB \$12.95**



3-Section v/f Insert for F1 Tray.

**Cat. No. 44GINS3 \$6.80**



2+1 Section v/f Insert for F1 Tray.

**Cat. No. 44GINS21 \$6.80**



4-Section v/f Insert for F1 Tray.

**Cat. No. 44GINS4 \$6.80**



6-Section v/f Insert for F1 Tray.

**Cat. No. 44GINS6 \$6.80**



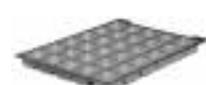
6-Section v/f multi-6-Section Insert for F1 Tray.

**Cat. No. 44GINS6D \$6.80**



8-Section v/f Insert for F1 Tray.

**Cat. No. 44GINS8 \$6.80**



30-Section v/f Insert for F1 Tray.

**Cat. No. 44GINS30 \$6.80**

### Inserts for F2 Trays:



Foam insert, fits x30 bottles 40-45mm diameter x 135mm H in an F2 tray with a lid (or in an F1 tray without lid).

**Cat. No. 44GFIB \$12.95**



Foam insert, fits x20 safety glasses (Cat. 44SG & 44SGF types) in an F2 tray with a lid.

**Cat. No. 44GFISG \$12.95**

Foam insert, fits x30 calculators in an F2 tray with a lid:

Calculators 7 x 65mm **Cat. No. 01FC765 \$12.95**

Calculators 7 x 70mm **Cat. No. 01FC770 \$12.95**

Calculators 16 x 80mm **Cat. No. 01FC1680 \$12.95**



x15 Graphics Calculators 23 x 80mm

**Cat. No. 01FC2380 \$12.95**



Foam Insert for 56 Test Tubes (24mm diameter), Fits F1 shallow and F2 deep trays only.

**Cat. No. 44GFT56 \$12.95**



Foam Insert for 108 Test Tubes (17mm diameter), Fits F1 shallow and F2 deep trays only.

**Cat. No. 44GFT108 \$12.95**

## WIRE TEST TUBE BASKET



This durable spray coated basket doubles as a test tube carrier and a handy tray insert for 25mm boiling test tubes either on the bench or tucked away neatly in a Grattells Frame or Trolley. Capacity 108 tubes.

**Cat. No. 44GWTTB \$110.00**

## FOAM INSERT CUSTOMISABLE



Fits shallow (F1) and deep (F2) trays only. This clever foam insert has squares scored into it - so you just need to pop out some of them to make exactly the shape of insert you need. So whatever irregular shaped items you need to store safely, all you need to do is make a custom shape in the insert and it can be tidied away safely and securely.

**Cat. No. 44GFIC \$12.95**

## LABELHOLDERS for Trays



Label Holder for F1trays, pk/10

**Cat. No. 44LHF1 \$12.50**



Label Holder for F2,25,3 trays, pk/10

**Cat. No. 44LHF2 \$16.50**

## LIDS



Translucent clip-on lid fits all tray sizes

**Cat. No. 01LF1 \$6.00**

## LARGE ITEM TROLLEY

For Power Supplies, Microscopes, and extra wide items, this trolley is the perfect solution. Choose the 1055mm wide Model 3022 or the 710mm wide Model 2022. Both models are available in 'level-with-bench' style at 850mm height or 'under-bench' style at 725mm height. Note that the 3022 requires x 2 or more 44G363 shelves and the 2022 requires x 2 or more 44G362 shelves sold separately. Top is included.



Large Item Trolley, 'level-with-bench' style, 1055x420x850mm (WxDxH)

**Cat. No. 44G3022 \$380.00**

Large Item Trolley, 'under-bench' style, 1055x420x725mm (WxDxH)

**Cat. No. 44G3022U \$380.00**

Large Item Trolley, 'level-with-bench' style, 710x420x850mm (WxDxH)

**Cat. No. 44G2022 \$350.00**

Large Item Trolley, 'under-bench' style, 710x420x725mm (WxDxH)

**Cat. No. 44G2022U \$350.00**

**Shelves:** for 3022 models: Shelf w/clips, each.

**Cat. No. 44G363 \$76.00**

**Shelves:** for 2022 models: Shelf w/clips, each.

**Cat. No. 44G362 \$56.00**

## TROLLEY, LIBRARY / GENERAL PURPOSE

A sturdy and versatile mobile trolley with two large plastic heavy duty bins. The fully welded powder coated frame is very manoeuvrable with four swivel castors built to carry heavy loads. Bins are removable and stackable. Ideal for Library work but equally well suited for around the laboratory (equipment set up, glassware collection, moving science equipment, etc). Overall bin dimensions 640mm x 410mm x 260mm deep. (Spare bins available). Handle height 980mm, Swivel castors 100mm grey non-marking wheels.



**Cat. No. 01LBT10 \$295.00**

**SPARE BINS**

**Cat. No. 01LBT1B \$41.80**

## TRIPOD



### Triangular cast iron

150mm high. Recommended for shorter Bunsen & Spirit Burners

**Cat. No. 44TR150 \$9.60**

200mm high. Recommended for our Bunsens

**Cat. No. 44TR200 \$10.50**



### Round cast iron

210mm high. Ring is 125mm O.D. x 92mm I.D.

**Cat. No. 44TR210 \$7.20**

## TUBING CONNECTORS

T-Shaped

3.2mm **Cat. No. 44PVC3T \$1.60**

8.0mm **Cat. No. 44TCPT \$1.20**

10.0mm **Cat. No. 44TCPT10 \$1.40**

## TUBING PVC (price is per meter)

3.2 mm I.D. **Cat. No. 44PVC3 \$1.00**

4.8 mm I.D. **Cat. No. 44PVC4 \$1.40**

6.4 mm I.D. **Cat. No. 44PVC6 \$1.65**

9.5 mm I.D. **Cat. No. 44PVC9 \$2.40**

11 mm I.D. **Cat. No. 44PVC11 \$3.70**

16 mm I.D. **Cat. No. 44PVC16 \$5.95**

## TUBING RUBBER



Red rubber general-use laboratory tubing supplied per metre. (Not typically used though as Bunsen tubing; refer Bunsen tubing earlier this section.)

5.0mm I.D. **Cat. No. 44TRR45 \$2.00/m**

6.0mm I.D. **Cat. No. 44TRR6 \$2.10/m**

8.0mm I.D. **Cat. No. 44TRR8 \$2.40/m**

10.0mm I.D. **Cat. No. 44TRR10 \$3.00/m**

## TUBING RUBBER, PRESSURE

Red rubber laboratory tubing for high pressure use (eg, vacuum), supplied per metre.

3.0mm I.D., 3.0mm Wall **Cat. No. 44TRP3 \$2.60/m**

6.0mm I.D., 4.5mm Wall **Cat. No. 44TRP6 \$4.65/m**

8.0mm I.D., 4.5mm Wall **Cat. No. 44TRP8 \$5.20/m**

## WATER BATH, FOR USE WITH IEC HOT PLATE



A useful Water Bath that is powered by an IEC Hot Plate. Test tube stands can fit so biological work is low cost and convenient. The ends of the bath slide down to rest on the work bench for a stable support but also slide up to provide the smallest size for storage. The bath can be

used also as a dry oven.

A Thermostat Control (44WBHPT) fits to the edge of the bath to control the Hot Plate so the water temperature is held constant. This control is purchased separately.

For an approximate temperature control, the careful adjustment of the heat regulator of the Hot Plate can keep the water bath reasonably steady but not as regulated and accurate as with the Thermostat Control.

**Cat. No. 44WBHP \$315.00**

**Cat. No. 44WBHPT \$225.00**

The following test tube racks fit into the IEC Hotplate Water Bath:



Test Tube Rack, to fit 8x25mm tubes.

**Cat. No. 48TTRWB \$22.00**

Test Tube Rack, to fit 8x10mm / 12x16mm tubes.

**Cat. No. 48TTRWB2 \$22.00**

## WAX TAPERS

100 per box. **Cat. No. 44WT** **\$28.00**

## WHITEBOARDS

### TOP QUALITY WHITE BOARDS and Accessories

(To view the complete range of products refer Delta's General Catalogue)

### PORCELAIN ON STEEL WHITE AND DELTA GLARE-FREE BOARDS (Magnetic Receptive)

Top quality board. The most scratch resistant! Permanent marker ink is removable. Supplied with aluminium frame as standard. Will not discolour and is resistant to acids. Double-sided boards have pivot brackets as an optional extra. Supplied complete with wall fixing brackets.



### SINGLE-SIDED

Cat. No.	Size	Price
12PC96	900 x 600	\$108.00
12PC129	1200 x 900	\$174.60
12PC1212	1200 x 1200	\$180.00
12PC1512	1500 X 1200	\$288.00
12PC1812	1800 x 1200	\$297.00
12PC1224	2400 x 1200	\$394.00
12PC3612	3600 x 1200	\$575.00

### PRESENTATION WHITE BOARDS

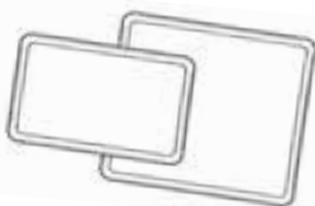
Double sided porcelain on steel, with strong metal frame on castors, gives mobility for large size white boards, and double the writing space.



Cat. No.	Description	Price
12PB912	900 x 1200	\$514.90
12PB1212	1200 x 1200	\$630.00
12PB1215	1200 x 1500	\$697.00
12PB1218	1200 x 1800	\$756.00

### STANDARD ACRYLIC (Magnetic Receptive) ALUMINIUM FRAMED COMPLETE WITH PEN RAIL

Mid priced whiteboard - good quality without the scratch resistance of Porcelain. Available as double-sided board. Aluminium framed, delivered complete with Pen Rail and wall fixing brackets.



Cat. No.	Size	Price
12AW46	400 x 600	\$42.00
12AW57	500 x 700	\$56.00
12AW96	900 x 600	\$68.00
12AW912	900 x 1200	\$106.60
12AW1212	1200 x 1200	\$152.00
12AW1215	1200 x 1500	\$205.00
12AW1218	1200 x 1800	\$245.00
12AW1224	1200 x 2400	\$308.00

## WHITEBOARDS FOR SPECIAL SITUATIONS

PLEASE CALL US TO TALK ABOUT YOUR SPECIFIC REQUIREMENTS

### MAGNETIC WHITEBOARD ERASER



Refills Available

**Cat. No. 12QTMA** **\$14.50**

### WHITEBOARD CLEANER



237 ml Bottle

**Cat. No. 12WC200** **\$7.70**

### WHITEBOARD DUSTER WASHABLE



**Cat. No. 12WE200** **\$8.90**

### WHITEBOARD PENS



Quality pens available in either chisel or bullet tip. Six colours - Black, Blue, Red, Green, Orange or Purple.

**Cat. No. 12WPEN** **\$1.30**

### WIND METER (ANEMOMETER)



Simple hand-held Dwyer Venturi type complete with cleaning kit.

**Cat. No. 44WM** **\$86.00**

### WIPES



Heavy-Duty, blue, disposable, roll. 45 metres x 30cm (Length x Width of roll). Individual length 530mm.

**Cat. No. 48WHD** **\$26.80**

**Resistance Wire**, (Constantan) roll, 100m x 0.2mm Diam.

**Cat. No. 42RW** **\$16.00**

# GLASS, PLASTIC AND PORCELAIN

## BEAKERS, Schott

Europe's leading manufacturer of laboratory glassware. Good resistance to chemicals. Graduated, borosilicate glass - superior manufacturing standards. Pack size is 10 (ordering by the pack reduces transit breakage).

	Cat. No.		
50ml	49BG50		\$8.75
		10+	\$8.40
100ml	49BG100		\$6.60
		10+	\$6.40
150ml	49BG150		\$8.60
		10+	\$8.00
250ml	49BG250		\$6.90
		10+	\$6.80
400ml	49BG400		\$10.00
		10+	\$9.55
600ml	49BG600		\$10.40
		10+	\$9.90
800ml	49BG800		\$17.90
1000ml	49BG1000		\$17.40
2000ml	49BG2000		\$34.00
3000ml	49BG3000		\$48.50



2000ml	49BGC2000		\$19.55
		4+	\$18.80
3000ml	49BGC3000		\$40.80
		4+	\$38.55
5000ml	49BGC5000		\$64.50

## BEAKERS, Bomex Brand

Borosilicate, Heat-Resistant Glass. Graduated, Low Form. Manufactured to AS2234 - 1979. Discount for pack size. (ordering by the pack reduces the "each price" as well as transit damage).



	Cat. No.		
50ml	49BGB50		\$2.50
		12+	\$2.20
100ml	49BGB100		\$2.50
		12+	\$2.35
150ml	49BGB150		\$2.50
		12+	\$2.20
200ml	49BGB200		\$2.60
		12+	\$2.30
250ml	49BGB250		\$3.20
		12+	\$3.00
400ml	49BGB400		\$3.40
		12+	\$3.10
500ml	49BGB500		\$4.60
		6+	\$4.30
600ml	49BGB600		\$4.70
		6+	\$4.40
800ml	49BGB800		\$8.50
		6+	\$8.00
1000ml	49BGB1000		\$7.80
		6+	\$7.40
2000ml	49BGB2000		\$15.20
		4+	\$14.40
3000ml	49BGB3000		\$22.80
5000ml	49BGB5000		\$40.00



## BEAKERS, Boeco

This fine range of glassware made by Boeco Germany is considered by many to be equivalent in performance to Schott glassware. Low form, with lip and graduation, "BOECO Germany", boro 3.3. Pack size is indicated by the price break.

	Cat. No.		
50ml	49BGC50		\$5.65
		10+	\$5.45
100ml	49BGC100		\$4.00
		10+	\$3.85
150ml	49BGC150		\$4.00
		10+	\$3.85
250ml	49BGC250		\$4.20
		10+	\$4.00
400ml	49BGC400		\$5.10
		10+	\$4.95
600ml	49BGC600		\$5.90
		10+	\$5.80
800ml	49BGC800		\$10.00
		10+	\$9.60
1000ml	49BGC1000		\$11.00
		10+	\$10.40



## BEAKERS, Polypropylene

Graduated

50ml		Cat. No.49BP50	\$1.90
100ml		Cat. No.49BP100	\$2.10
250ml		Cat. No.49BP250	\$3.10
500ml		Cat. No.49BP500	\$3.70
1000ml		Cat. No.49BP1000	\$6.40

## BEEHIVE SHELF



Porcelain, 100mm.	Cat. No. 44BS100	\$5.60
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## BOTTLE, GLASS DROPPING

Clear 30ml	Cat. No. 49BDG	\$2.70
Amber 25ml	Cat. No. 49BDGA	\$3.00
Dropper + Teat only (25ml)	Cat. No. 49BDGAT	\$1.40
Amber, 50ml	Cat. No. 49BDGA50	\$2.40
Dropper + Teat only (50ml)	Cat. No. 49BDGAT50	\$1.50



## BOTTLES, GLASS REAGENT, CLEAR

Narrow neck, with polypropylene stopper:			
250ml	Cat. No. 49BRGCP250	\$5.90	
500ml	Cat. No. 49BRGCP500	\$6.85	
Wide neck, with ground glass stopper:			
250ml	Cat. No. 49BRGCW250	\$3.90	



## REAGENT, AMBER

Narrow neck			
125ml, g/g stopper	Cat. No. 49BRGA125	\$4.85	
250ml, PP Stopper	Cat. No. 49BRGA250	\$5.00	

## BOTTLE, LAB

Schott

Clear Glass with screw cap and pouring ring.



50ml	Cat. No. 49BRG50	\$13.75
100ml	Cat. No. 49BRG100	\$9.80
250ml	Cat. No. 49BRG250	\$12.50
500ml	Cat. No. 49BRG500	\$14.00
1000ml	Cat. No. 49BRG1000	\$24.00

Bomex

Made of Borosilicate 3.3 clear glass according to DIN EN ISO 3585 standards. They are robust, stable, scratch and chemical resistant. All bottles have the same screw

thread with interchangeable screw caps and pouring rings. Easy to clean and sterilize, suitable for acids, alkalis, solvents, media and aqueous solutions.



100ml	Cat. No. 49BRL100	\$6.00
	10+	\$5.70
250ml	Cat. No. 49BRL250	\$6.30
	10+	\$5.95
500ml	Cat. No. 49BRL500	\$8.40
	10+	\$8.00
1000ml	Cat. No. 49BRL1000	\$11.70
	10+	\$11.15
2000ml	Cat. No. 49BRL2000	\$29.40
	10+	\$27.95
5000ml	Cat. No. 49BRL5000	\$68.00

## LAB BOTTLE SPARES

Spare Caps and Pouring Rings fit both Schott & Bomex Brand lab bottles.

Caps:

Cap, blue, to fit 100ml/250ml/500ml/1L & 2L lab bottles.

Cat. No. 49BRGL45	\$3.10
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Cap, blue, to fit 50ml lab bottles.

Cat. No. 49BRGL32	\$4.60
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Cap, Red, Schott, PTFE to fit 100ml/250ml/500ml/1L & 2L lab bottles. Chemically Resistant.

Cat. No. 49BRGI45	\$18.50
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Cap, Red, Schott, PTFE to fit 50ml lab bottles. Chemically Resistant

Cat. No. 49BRGI32	\$12.50
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Pouring Rings:

Pouring Ring GL45 PP Blue to fit 100ml/250ml/500ml/1L & 2L lab bottles.

Cat. No. 49BRGR45	\$2.00
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Pouring Ring GL32 PP Blue to fit 50ml lab bottles.

Cat. No. 49BRGR32	\$2.40
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## BOTTLES, McCARTNEY

McCartney Universal Bottle 28mL with Aluminium cap, Each



Cat. No. 49MB	\$1.95
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## BOTTLES, PLASTIC Dropping

With screw top. Sold in packs of 10.

50ml	Cat. No. 49BPD50	\$8.40
100ml	Cat. No. 49BPD100	\$9.50
150ml	Cat. No. 49BPD150	\$16.50
200ml	Cat. No. 49BPD200	\$21.25
250ml	Cat. No. 49BPD250	\$15.50
Spare Tops (pack/10)	Cat. No. 49BPDT	\$3.20



## BOTTLE STORAGE, Gratnell

Neatly store small bottles up to 44mm in diameter (eg, 50ml Schott Bottle, 50ml & 100ml Plastic Dropping Bottles, Glass Dropping Bottles) with this 30-bottle foam insert in a Gratnell F1 or F2 tray (If a lid is required, choose the F2 tray). Trays available in 4 colours (R,B,G,Y; choose code accordingly).



30-Bottle Foam Insert	<b>Cat. No. 44GFIB</b>	<b>\$12.95</b>
F1 Tray, shallow, 75mm	<b>Cat. No. 01F1R(B/G/Y)</b>	<b>\$7.80</b>
F2 Tray, deep, 150mm	<b>Cat. No. 01F2R(B/G/Y)</b>	<b>\$12.00</b>

## DROPPING BOTTLE / UTILITY TRAYS

Durable, rectangular plastic trays for our plastic dropping bottles with ten compartments. Comes complete with a removable divider. Great for organizing working solutions for student chemistry and dozens of other uses.



For 10 x 50ml plastic Dropping Bottles (Cat. No. 49BPD50): Tray is 205x84x37mm (LWD)

<b>Cat. No. 49UTD</b>	<b>\$8.40</b>
10+	<b>\$7.40</b>

For 10 x 100ml plastic Dropping Bottles (Cat. No. 49BPD100): Tray is 242x98x50mm (LWD)

<b>Cat. No. 49UTL</b>	<b>\$15.00</b>
10+	<b>\$13.50</b>

For 10 x 150 to 250ml plastic Dropping Bottles (Cat. No. 49BPD150, 200, 250) Tray is 300x120x50mm (LWD)

<b>Cat. No. 49UTXL</b>	<b>\$18.00</b>
10+	<b>\$15.00</b>

## BOTTLES PLASTIC



Reagent Polypropylene  
Wide neck screw cap.

250ml	<b>Cat. No. 49BRP250</b>	<b>\$3.90</b>
500ml	<b>Cat. No. 49BRP500</b>	<b>\$4.60</b>



Square Bottle Polyethylene (HD)

1000ml	<b>Cat. No. 49BRP1000</b>	<b>\$3.95</b>
2000ml	<b>Cat. No. 49BRP2000</b>	<b>\$4.80</b>

## WASH BOTTLES



Spout on top:

250ml	<b>Cat. No. 49BW250</b>	<b>\$4.00</b>
500ml	<b>Cat. No. 49BW500</b>	<b>\$5.90</b>



Spout moulded down side:

250ml	<b>Cat. No. 49BWM250</b>	<b>\$3.70</b>
500ml	<b>Cat. No. 49BWM500</b>	<b>\$5.50</b>
250ml, Kartel Brand	<b>Cat. No. 49BWM250K</b>	<b>\$7.90</b>
500ml, Kartel Brand	<b>Cat. No. 49BWM500K</b>	<b>\$8.80</b>

## BOTTLE, SAMPLE

30ml, PP, 82 x 27mm (H x diam.) Pack 1000

**Cat. No. 49BSP28** **\$240.00**

70ml, PST, 60 x 42mm (H x diam.) Pack 500

**Cat. No. 49BSP70** **\$256.00**

Clear, PP, 70ml, no label, Each

<b>Cat. No. 49BSPP70</b>	<b>\$0.40</b>
50+	<b>\$0.35</b>
550+	<b>\$0.30</b>

Clear, PP, 70ml, label, Each

<b>Cat. No. 49BSPL70</b>	<b>\$0.45</b>
50+	<b>\$0.40</b>
550+	<b>\$0.35</b>

## BOTTLE WINCHESTER

Amber, round, 2.5 litre, plastic cap

**Cat. No. 49BWA** **\$21.00**

## BROKEN GLASS CONTAINER

With clearly marked bright yellow warning.

20 litre with lid



**Cat. No. 48CBG20** **\$32.00**

10 litre with lid

**Cat. No. 48CBG10** **\$22.40**

5 litre with lid

**Cat. No. 48CBG5** **\$13.20**

## BULK LIQUID STORAGE CONTAINERS

Made of chemically-resistant HDPE. Ideal for dispensing working solutions into plastic and glass dropping bottles and for other storage applications (without tap). 20 litre unit stores safely upright to prevent 'accidental' leaks, save space and minimize chemical contact with the seal.



5 Litre

5 Litre (No tap required)	<b>Cat. No. 49BSC5</b>	<b>\$18.80</b>
10 Litre (requires a tap)	<b>Cat. No. 49BSC10</b>	<b>\$39.60</b>
20 Litre (requires a tap)	<b>Cat. No. 49BSC20</b>	<b>\$41.85</b>



20 litre, down



20 litre up

## BULK STORAGE CONTAINER TAPS

**Tap, narrow mouth**, for bulk Storage containers 10 and 20 litres. This tap fits into mouth of 49BPD series PE dropping bottles.

**Cat. No. 49BSCTN** **\$20.00**

**Tap, wide mouth**, for bulk Storage containers 10, 20, 50 litres, for fast dispensing into wide mouth vessels.

**Cat. No. 49BSCTW** **\$5.75**

## BURETTA

The BURETTA is a new product from the makers of the popular diji and is used to replace Burettes and Volumetric pipettes. As such, it has all the advantages of a diji and can serve the functions of three different liquid-handling tools in the lab – graduated pipette, volumetric pipette and burette. The graduation markings are finer than a standard diji, cover the total volume as with a burette, and are easy for students to read without parallax error due to the provision of a red 'reading' line on the seal. The BURETTA is calibrated to the highest pipette accuracy rating - ISO Volumetric A grade accuracy, and can be used in a burette stand or held in the hand to provide greater ease of use and limit bench clutter.



Cat. No. 49BURT 1-9 **\$64.00**  
10+ **\$59.60**

## BURETTES (B-GRADE)

### MBL BRAND

Our most popular modular 50ml B Grade burette with accuracy to +/-0.1ml. This Modular Burette complies with ISO 385 and incorporates a fluted top to make filling easier and safer (can also be used with a funnel if desired). The stopcock is PTFE for grease-free performance and the burette tube has easy-to-read blue enamel graduations. The modular design makes for easy replacement of the graduated tube, stopcock and jet. All spares are available.



Complete Burette

Cat. No. 49BU50 **\$69.80**

Tube, Glass, Graduated, 50ml, Spare

Cat. No. 49BU50T **\$46.25**

Jet, Glass, Spare

Cat. No. 49BU50JG **\$26.75**

Stopcock, Teflon, Spare

Cat. No. 49BU50ST **\$32.75**



Burette, Glass, 50ml with PTFE stopcock.

Cat. No. 49BUB50 **\$38.00**



Burette, Glass, 50ml with PTFE stopcock with White Graduation Markings (permanganate titrations)

Cat. No. 49BUBW50 **\$38.00**



Burette, Plastic, 50ml with PTFE stopcock.

Cat. No. 49BUA50 **\$22.50**

## BURETTES (A-GRADE) DIJI BURETTE

**NEW**  
Product



This new 'tapless' burette from the makers of diji operates by positive displacement of the seal (or 'dart') within the burette thereby eliminating a lot of the drawbacks of traditional burettes and introducing a host of new benefits! Filling and dispensing from the burette are by means of an internal teflon dart and an external doughnut-shaped magnet which renders superior control.

Positive displacement means...

- operation and accuracy are maintained with viscous and evaporative fluids
- filling from the bottom eliminates dangerous top filling
- easier, safer, faster preconditioning to commercial standards
- easy preconditioning facilitates immediate reuse with another chemical thereby reducing washing
- fluid isolation from the atmosphere reduces drift
- condition of glass wall does not affect volumetric accuracy
- bubbles in burette have no effect on accuracy
- use of a stand is OPTIONAL!

NO TAP means...

- blockages are eliminated and no tap-associated cleaning and breakages
  - durability and longer life with lower replacement costs
  - no tap adjustments required to stop leaks
- Red line reading means...
- greatly reduced parallax error
  - improved precision
  - easy reading of dark fluids

PTFE jet means...

- elimination of breakages and blockages as seen in glass burette tips
- hydrophobic PTFE maintains ability to dispense small drop sizes to 0.01ml

Simple barrel body means...

- cost of a burette breakage is greatly reduced because only the simple (& less costly) barrel needs replacing (the dart is transferable)
- much easier and faster to clean

Plastic protection of both ends of the burette barrel means...

- increased durability, lower costs
- Sliding seal means...more responsive and easier to operate than a tap

Ergonomic design means

- diji Burette can be easily used as a highly accurate pipette for freehand titrations (without a stand).
- versatility - can be used for a wide variety of liquid

handling operations

- more progress per lesson
- less equipment usage
- better student outcomes

PTFE materials mean...the internal dart is unaffected by chemicals.

Clean storage means...dust and atmospheric contaminants are isolated from internal glass walls of the burette tube.

Schott borosilicate Duran glass means...durability!

<b>Cat. No. 49DB</b>	1 - 9	<b>\$75.00</b>
	10 - 19	<b>\$72.60</b>
	20+	<b>\$69.50</b>



### Modular A-Grade Burette

Burette Glass, 50x0.05ml, detachable PTFE stopcock, Class AS, blue graduations, batch work certificate, DIN ISO 385.

<b>Cat. No. 49BURAG50</b>	<b>\$74.00</b>
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Spares FOR 49BURAG50:  
Detachable PTFE Key Stopcock only

<b>Cat. No. 49BURAGS</b>	<b>\$36.00</b>
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Graduated Burette Tube only, 50ml, Clear Glass, Class AS

<b>Cat. No. 49BURAGT</b>	<b>\$40.00</b>
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### One-piece Glass A-Grade Burette

Burette Glass, 50x0.05ml, enclosed PTFE stopcock, A-Grade.

<b>Cat. No. 49BURA50</b>	<b>\$45.00</b>
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### CONDENSER, LIEBIG

400mm length, borosilicate glass, hose Fittings, 19/26 joints.

<b>Cat. No. 49CL400</b>	<b>\$18.00</b>
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### CRUCIBLE, PORCELAIN, with Lid

Dimensions below are Top O.D. x Base x Height (txbxh) and are approximate. Slight variation exists. Other non-stock sizes are available from 5ml to 400ml with a lead time; please contact us.



#### TALL FORM

15ml, 32x20x34mm (txbxh)	<b>Cat. No. 48CPT15</b>	<b>\$1.90</b>
25ml, 38x23x40mm (txbxh)	<b>Cat. No. 48CPT25</b>	<b>\$2.80</b>

#### MEDIUM FORM

15ml, 35x21x30mm (txbxh)	<b>Cat. No. 48CPM15</b>	<b>\$1.90</b>
25ml, 40x23x36mm (txbxh)	<b>Cat. No. 48CPM25</b>	<b>\$2.20</b>
40ml, 48x26x42mm (txbxh)	<b>Cat. No. 48CP2203</b>	<b>\$2.40</b>

#### LOW FORM

15ml, 43X19X23mm (txbxh)	<b>Cat. No. 48CPL15</b>	<b>\$1.90</b>
25ml, 47x24x27mm (txbxh)	<b>Cat. No. 48CPL25</b>	<b>\$2.20</b>

### CRUCIBLE, NICKEL

25ml with lid, 99% pure.	<b>Cat. No. 48CN25</b>	<b>\$24.40</b>
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## CYLINDERS, MEASURING

All Delta cylinders are borosilicate, not soda glass.

Superior Marienfeld, Made in Germany, Borosilicate

(Not to be confused with the chinese superior brand)



10ml x 0.2ml	<b>Cat. No. 49CG10</b>	<b>\$14.40</b>
25ml x 0.5ml	<b>Cat. No. 49CG25</b>	<b>\$19.90</b>
50ml x 1ml	<b>Cat. No. 49CG50</b>	<b>\$15.70</b>
100ml x 1ml	<b>Cat. No. 49CG100</b>	<b>\$17.80</b>
250ml x 2ml	<b>Cat. No. 49CG250</b>	<b>\$31.00</b>
500ml x 5ml	<b>Cat. No. 49CG500</b>	<b>\$42.00</b>
1000ml x 10ml	<b>Cat. No. 49CG1000</b>	<b>\$62.00</b>
2000ml x 20ml	<b>Cat. No. 49CG2000</b>	<b>\$116.00</b>

### Supertek Brand, Borosilicate 3.3

5ml x .1ml	<b>Cat. No. 49CG5S</b>	<b>\$5.20</b>
10ml x .2ml	<b>Cat. No. 49CG10S</b>	<b>\$6.80</b>
25ml x .5ml	<b>Cat. No. 49CG25S</b>	<b>\$7.00</b>
50ml x 5ml	<b>Cat. No. 49CG50S</b>	<b>\$7.95</b>
100ml x 1ml	<b>Cat. No. 49CG100S</b>	<b>\$10.00</b>
250ml x 2ml	<b>Cat. No. 49CG250S</b>	<b>\$18.40</b>
500ml x 5ml	<b>Cat. No. 49CG500S</b>	<b>\$22.70</b>
1000ml x 10ml	<b>Cat. No. 49CG1000S</b>	<b>\$32.60</b>

### Bomex Brand, Borosilicate 3.3

10ml x .2ml	<b>Cat. No. 49CGB10</b>	<b>\$5.80</b>
25ml x .5ml	<b>Cat. No. 49CGB25</b>	<b>\$5.95</b>
50ml x 1ml	<b>Cat. No. 49CGB50</b>	<b>\$6.50</b>
100ml x 1ml	<b>Cat. No. 49CGB100</b>	<b>\$8.50</b>
250ml x 2ml	<b>Cat. No. 49CGB250</b>	<b>\$11.75</b>
500ml x 5ml	<b>Cat. No. 49CGB500</b>	<b>\$17.70</b>
1000ml x 10ml	<b>Cat. No. 49CGB1000</b>	<b>\$28.00</b>
2000ml +/- 20ml	<b>Cat. No. 49CGB2000</b>	<b>\$45.00</b>

**NEW**  
Product

### With Plastic Foot

10ml	<b>Cat. No. 49CGPF10</b>	<b>\$4.95</b>
50ml	<b>Cat. No. 49CGPF50</b>	<b>\$7.00</b>
100ml	<b>Cat. No. 49CGPF100</b>	<b>\$8.00</b>

(Other sizes upon request)

### Polypropylene

10ml x 0.2ml	<b>Cat. No. 49CP10</b>	<b>\$1.50</b>
25ml x 0.5ml	<b>Cat. No. 49CP25</b>	<b>\$1.90</b>
50ml x 1ml	<b>Cat. No. 49CP50</b>	<b>\$3.00</b>
100ml x 1ml	<b>Cat. No. 49CP100</b>	<b>\$3.40</b>
250ml x 2ml	<b>Cat. No. 49CP250</b>	<b>\$6.00</b>
500ml x 5ml	<b>Cat. No. 49CP500</b>	<b>\$9.80</b>
1000ml x 10ml	<b>Cat. No. 49CP1000</b>	<b>\$15.10</b>
2000ml x 20ml	<b>Cat. No. 49CP2000</b>	<b>\$31.00</b>



## TPX, transparent plastic



10ml x .2ml	Cat. No. 49CX10	\$10.00
25ml x .5ml	Cat. No. 49CX25	\$14.25
50ml x 1ml	Cat. No. 49CX50	\$16.40
100ml x 1ml	Cat. No. 49CX100	\$16.30
250ml x 2ml	Cat. No. 49CX250	\$30.00
500ml x 5ml	Cat. No. 49CX500	\$42.50
1000ml x 10ml	Cat. No. 49CX1000	\$64.80

## PROTECTION COLLARS, PLASTIC FOR GLASS CYLINDERS



Reduce the risk of breakage upon tipping.

To fit 10ml Cylinder	Cat. No. 49CGP10	\$0.50
To fit 25ml Cylinder	Cat. No. 49CGP25	\$0.50
To fit 50ml Cylinder	Cat. No. 49CGP50	\$0.50
To fit 100ml Cylinder	Cat. No. 49CGP100	\$0.75
To fit 250ml Cylinder	Cat. No. 49CGP250	\$0.80
To fit 500ml Cylinder	Cat. No. 49CGP500	\$1.60
To fit 1000ml Cylinder	Cat. No. 49CGP1000	\$2.45

## DESSICATOR



With vacuum tap and porcelaine shelf.  
150mm diameter

Cat. No. 49DGV150 \$68.00

## diji - For All Liquid Pipetting

### Versatility:

Many NZ secondary schools have now chosen diji as their liquid-handling tool of choice. They have reported that their glassware costs have dropped significantly since switching to diji and that students find dijis much easier to use than volumetric pipette / suction device combinations. Other major advantages include increased precision & accuracy, convenience, better results and improved user safety. The U.K. school science equipment and safety advisory body CLEAPPS has tested diji and found it "excellent". The 10ml and 25ml sizes are used widely in NZ schools, with the most popular diji being the 25ml A-grade used widely at Senior Chemistry level for titrations and general liquid-handling. 1ml, 2ml, & 5ml dijis are also available.

### Meniscus or No meniscus?

The new STANDARD can be used with a meniscus or without a meniscus by using the red line on the seal.



## The new STANDARD diji vs. the older types (Mk I and Mk II):

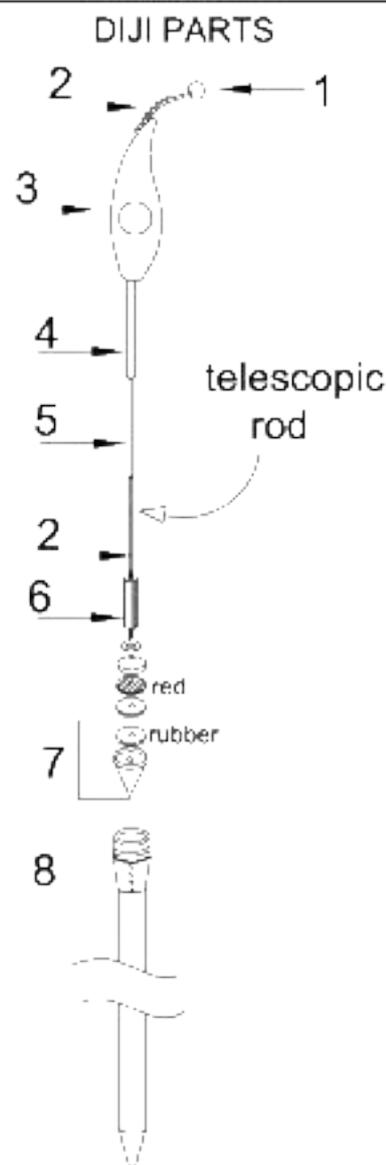
How to tell the difference:

Both the new STANDARD & the old Mk1 25ml syrettes are graduated from -2 to 23ml. The Mk2 25ml syrettes are graduated from 0 to 24ml. Some stock of older Mk1 syrettes is available, **but ALL dijis**

can accept the new STANDARD syrettes which will be supplied when older stock is depleted. Full B-grade dijis and B-grade syrettes are no longer available as parts.

### Spare Parts: For the new STANDARD diji

Refer the following diagram for identification:



- 1 - BALL
- 2 - PISTON ROD PLASTIC
- 3 - HAND-PIECE, 'x' ml with decal insert
- 4 - TOP TUBE, 'x' ml.
- 5 - MIDDLE TUBE, 'x' ml.
- 6 - KNURLED ADJUSTING NUT
- 7 - SEAL ASSEMBLY, 'x' ml.
- 8 - SYRETTLE. Standard, Burette or Accusafe. 'x' ml.

**Standard diji, Red Line, A-GRADE**

10ml Complete with Syrette, Handpiece and  
Piston, +/- 0.05ml. **Cat. No. 49DJ10**

	<b>\$48.80</b>
10+	<b>\$44.95</b>
20+	<b>\$43.90</b>

25ml Complete with Syrette, Handpiece and  
Piston, +/- 0.1ml. **Cat. No. 49DJ25**

	<b>\$50.80</b>
10+	<b>\$47.20</b>
20+	<b>\$44.40</b>

**Spare parts for the new 'STANDARD' diji:****SYRETTES**

Syrette, A, for 10ml Standard diji, +/- 0.05ml

<b>Cat. No. 49DS10</b>	<b>\$10.00</b>
6+	<b>\$9.20</b>

Syrette, A, for 25ml Standard diji, +/- 0.1ml

<b>Cat. No. 49DS25</b>	<b>\$14.75</b>
6+	<b>\$13.95</b>

**SEALS**

Seal Assembly, Red Line, Standard diji, 10ml

<b>Cat. No. 49DSL10</b>	<b>\$6.00</b>
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Seal Assembly, Red Line, Standard diji, 25ml

<b>Cat. No. 49DSL25</b>	<b>\$6.80</b>
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**PISTON RODS, metal, telescopic**

Rod, complete, 10ml **Cat. No. 49DR10** **\$28.80**

Nylon + chromed piston only, 25ml  
**Cat. No. 49DRN25** **\$20.50**

(NOTE: If you wish to convert your MKII diji to the  
new STANDARD red line type, you need to buy the  
STANDARD piston rod plus the red line seal assembly.)

**BURETTA**

The BURETTA is a new product from the makers of the popular diji and is used to replace Burettes and Volumetric pipettes. As such, it has all the advantages of a diji and can serve the functions of three different liquid-handling tools in the lab – graduated pipette, volumetric pipette and burette. The graduation markings are finer than a standard diji, cover the total volume as with a burette, and are easy for students to read without parallax error due to the provision of a red 'reading' line on the seal. The BURETTA is calibrated to the highest pipette accuracy rating - ISO Volumetric A grade accuracy, and can be used in a burette stand or held in the hand to provide greater ease of use and limit bench clutter.



<b>Cat. No. 49BURT</b>	1-9 <b>\$64.00</b>
	10+ <b>\$59.60</b>

**SYRETTE FOR BURETTA**

SYRETTE, 25ml Burette, +/- 0.03ml, ISO Vol. A-Grade

<b>Cat. No. 49BURTA</b>	<b>\$29.25</b>
6+	<b>\$26.30</b>

**OLDER DIJI PARTS: MARK II****SYRETTES:****MARK II REPLACEMENT B-GRADE GLASS SYRETTES, WITHOUT Teflon sheath.**

SYRETTE, B, for 10ml diji, +/- 0.1ml.

<b>Cat. No. 44DJS102</b>	<b>\$8.40</b>
6+	<b>\$7.60</b>

SYRETTE, B, for 25ml diji, +/- 0.2ml.

<b>Cat. No. 44DJS252</b>	<b>\$9.20</b>
6+	<b>\$8.00</b>

Mark II Replacement A-grade Glass Syrettes refer  
Standard Replacement Syrettes

**SEAL ASSEMBLY, for Mk II dijis**

Seal Assembly, for 10ml diji, each

<b>Cat. No. 44DJSC10</b>	<b>\$6.00</b>
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**PISTON RODS, metal, telescopic, for Mk II dijis**

Complete piston, 10ml **Cat. No. 44DJR102** **\$28.40**

Complete piston, 25ml **Cat. No. 44DJR252** **\$25.00**

**BALLS (All dijis)**

Ball & Grub Screw for all dijis

<b>Cat. No. 49DJB</b>	<b>\$7.20</b>
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**EVAPORATING BASIN****PORCELAIN****Diameter/Capacity:**

75mm / 60 ml	<b>Cat.No: 44EB75</b>	<b>\$2.65</b>
82mm / 75 ml	<b>Cat.No: 44EB82</b>	<b>\$3.60</b>
96mm / 100 ml	<b>Cat.No: 44EB90</b>	<b>\$3.90</b>



## FLASKS, GLASS

### Erlenmeyer, Narrow Neck (N/N), Graduated



Volume	I.D.(mm)	Schott	Cat. No.	Price
50ml	19.5		Cat. No. 49FE50	\$11.00
100ml	28		Cat. No. 49FE100	\$10.80
200ml			Cat. No. 49FE200	\$12.00
250ml	31.5		Cat. No. 49FE250	\$9.60
500ml	31.5		Cat. No. 49FE500	\$17.60
1000ml	38		Cat. No. 49FE1000	\$27.20
2000ml	45		Cat. No. 49FE2000	\$52.95

#### Bocoe

50ml	19		Cat. No. 49FEC50	\$8.20
100ml	20		Cat. No. 49FEC100	\$5.50
250ml	31.5		Cat. No. 49FEC250	\$5.30
500ml	32		Cat. No. 49FEC500	\$6.80
1000ml	40		Cat. No. 49FEC1000	\$9.75
2000ml	44.5		Cat. No. 49FEC2000	\$36.40

#### Bomex

50ml	18		Cat. No. 49FEB50	\$2.90
100ml	17.5		Cat. No. 49FEB100	\$3.40
150ml	30.5		Cat. No. 49FEB150	\$3.40
250ml	30		Cat. No. 49FEB250	\$4.40
500ml	29		Cat. No. 49FEB500	\$5.50
1000ml	36		Cat. No. 49FEB1000	\$7.50
2000ml	43		Cat. No. 49FEB2000	\$19.30
5000ml	40		Cat. No. 49FEB5000	\$42.00

### Erlenmeyer, Wide neck (W/N), Graduated

**Tip !** The Wide neck 100ml flasks are popular for use in titrations.

#### Bocoe

100ml	32		Cat. No. 49FECW100	\$5.30
250ml	47		Cat. No. 49FECW250	\$6.65
500ml	49		Cat. No. 49FECW500	\$8.00
1000ml			Cat. No. 49FECW1000	\$10.90
2000ml	68		Cat. No. 49FECW2000	\$31.75

#### Bomex

100ml	30		Cat. No. 49FEBW100	\$3.60
200ml	43.5		Cat. No. 49FEBW200	\$4.00
250ml	43.5		Cat. No. 49FEBW250	\$4.70
500ml	45		Cat. No. 49FEBW500	\$6.00
1000ml	43		Cat. No. 49FEBW1000	\$9.00

### Volumetric, A-Grade, with Polystopper



50ml	Cat. No. 49FV50	\$11.50
100ml	Cat. No. 49FV100	\$13.20
250ml	Cat. No. 49FV250	\$16.40
500ml	Cat. No. 49FV500	\$26.00
1000ml	Cat. No. 49FV1000	\$37.50
2000ml	Cat. No. 49FV2000	\$60.00
5000ml	Cat. No. 49FV5000	\$280.00

### Spare stoppers for volumetric flasks:

Size 14/23 (fits 49FV100/250)	Cat. No. 49S1423	\$0.90
Size 19/26 (fits 49FV500)	Cat. No. 49S1926	\$1.20
Size 24/29 (fits 49FV1000)	Cat. No. 49S2429	\$1.80

### Filter, Borosilicate, with side arm



250ml	Cat. No. 49FF250	\$10.00
500ml	Cat. No. 49FF500	\$12.00
1000 ml	Cat. No. 49FF1000	\$18.00

### Separatory, glass, pear-shape

PTFE (Teflon) stopcock

50ml	Cat. No. 49FSPT50	\$19.80
100ml	Cat. No. 49FSPT100	\$16.00
250ml	Cat. No. 49FSPT250	\$23.00
500ml	Cat. No. 49FSPT500	\$27.00
1000ml	Cat. No. 49FSPT1000	\$45.00

## FUNNELS, Filter

#### Glass

50mm	Cat. No. 49FG50	\$2.50
75mm	Cat. No. 49FG75	\$3.20
100mm	Cat. No. 49FG100	\$5.40
125mm	Cat. No. 49FG125	\$9.60
150mm	Cat. No. 49FG150	\$18.00
200mm	Cat. No. 49FG200	\$42.00

#### Polypropylene

50mm	Cat. No. 49FP50	\$0.90
75mm	Cat. No. 49FP75	\$1.70
100mm	Cat. No. 49FP100	\$1.75
150mm	Cat. No. 49FP150	\$2.90





### Thistle Funnels

350 x 50mm      **Cat. No. 49FTB**      **\$5.50**

### Buchner Funnels, Porcelaine

55mm dia.      **Cat. No. 49FBP55**      **\$11.85**

90mm dia.      **Cat. No. 49FBP90**      **\$14.00**

### Buchner Funnel Bungs (Guko Rings)

Bung for 55mm Buchner Funnel,  
30Base x 35Top x 15Hole (mm).

**Cat. No. 49FBP55B**      **\$2.00**

Bung for 55mm Buchner Funnel,  
32Base x 42Top x 13Hole (mm)

**Cat. No. 49FBP55B2**      **\$2.40**

### Flask, Buchner & Bung complete:



Filter Flask, 250 ml with 35mm diam.  
Buchner funnel and No.12 rubber bung.

**Cat. No. 49FFBB250**      **\$14.50**

Filter Paper Circles, Grade1, 30mm pk/100

**Cat. No. 48FPC30**      **\$22.00**

Filter Flask, 500ml with 50mm diam.  
Buchner funnel and No.12 rubber bung.

**Cat. No. 49FFBB500**      **\$22.50**

Filter Paper Circles, Grade1, 42.5mm pk/100

**Cat. No. 48FPC45**      **\$22.00**

### GAS JARS



Gas Jar 20 x 5cm with cover.

**Cat. No. 49GJL**      **\$12.30**

Cover only - ground one side. 75 mm diameter.

**Cat. No. 49GJC**      **\$0.95**

Gas Jar 15 x 5cm with cover.

**Cat. No. 49GJS**      **\$8.90**

Gas Jar 20 x 7.5cm with cover.

**Cat. No. 49GJL75**      **\$14.00**

### GLASS TUBING, BOROSILICATE

Quality borosilicate glass tubing  
maximum length 500mm.

Cutting service available (fee applies)



**We can source a range of tubing sizes, Please enquire.**

6mm OD x 1mm Wall, length 500mm

**Cat. No. 49TG6**      **\$5.50**

10mm OD x 1.5mm Wall, length 500mm

**Cat. No. 49TG102**      **\$10.00**

Capillary, Bore size 1.2mm, 500mm

**Cat. No. 49TGC**      **\$9.20**

### CAPILLARY TUBES

Plain capillary tubes, soda glass, 75mm x I.D. 1.1-  
1.2mm, wall 0.2 +/- .02mm, 200/ vial.

**Cat. No. 49CT**      **\$20.80**

### GLASS CUTTER

Scriber type, very simple to use.

**Cat. No. 49GC**      **\$24.00**



Tubing type

**Cat. No. 49GCT**      **\$18.00**

### JUGS, PLASTIC, With graduations



1 litre      **Cat. No. 49JP1**      **\$12.00**

2 litre      **Cat. No. 49JP2**      **\$13.30**

3 litre      **Cat. No. 49JP3**      **\$16.00**

5 litre      **Cat. No. 49JP5**      **\$22.00**

### MORTAR & PESTLE, PORCELAINE

Diameter

75mm      **Cat. No. 48MP75**      **\$5.30**

100mm      **Cat. No. 48MP100**      **\$8.00**

130mm      **Cat. No. 48MP130**      **\$8.70**



### PIPETTES, TRANSFER

Plastic, disposable, box of 500

3ml x 0.5ml graduation, 3.5 ml draw

**Cat. No. 49PT3**      **\$27.50**

1 ml x 0.25ml graduation, 3.5 ml draw

**Cat. No. 49PT**      **\$25.45**



## PIPETTES, VOLUMETRIC, A - GRADE



5ml capacity	Cat. No. 49PA5	\$4.50
10ml capacity	Cat. No. 49PA10	\$5.70
20ml capacity	Cat. No. 49PA20	\$6.50
25ml capacity	Cat. No. 49PA25	\$6.90
50ml capacity	Cat. No. 49PA50	\$14.40
100ml capacity	Cat. No. 49PA100	\$17.50

## PIPETTES, VOLUMETRIC, A-GRADE WITH SAFETY BULB



These Volumetric A-grade pipettes have a "Safety Bulb", that is, an extra glass bulb above the graduation mark which assists in preventing movement of the liquid up into the suction device by slowing the liquid down and making fast upward movement more visible to the student's eye. Borosilicate 3.3 glass.

10ml capacity:	Cat. No. 49PAS10	\$6.20
20ml capacity:	Cat. No. 49PAS20	\$7.00
25ml capacity:	Cat. No. 49PAS25	\$7.40

## BOROSILICATE GLASS TEST TUBES

BRAND	CAT. NO.	DESCRIPTION	PACK SIZE	1-9 PRICE	10+ PRICE	BOX SIZE	RUBBER STOPPER CAT. NO.		
							SOLID	1-HOLE	2-HOLE
<b>BOROSILICATE GLASS TEST TUBES:</b>									
Delta	49TTHW15024	150 x 24mm with rim I.D. 20mm	10	\$ 13.00	\$ 12.40	100	47RSS20	47RSH20	47RS220
Delta	49TTHW15020	150 x 20mm with rim I.D. 17.5mm	10	\$ 13.20	\$ 12.55	100	47RSS15	47RSH15	47RS215
Delta	49TTHW12515	125 x 15mm with rim I.D. 13mm	10	\$ 8.25	\$ 7.85	100	47RSS13	47RSH13	-
Delta	49TTR15024	150 x 24mm rimless I.D. 19.2mm	10	\$ 12.50	\$ 11.90	100	47RSS17	47RSH17	-
Delta	49TTR15020	150 x 20mm rimless I.D. 17mm	10	\$ 12.50	\$ 11.90	100	47RSS15	47RSH15	47RS215
Bomex	49TTB16016	160x16mm with rim I.D. 14mm	10	\$ 7.00	\$ 6.50	100	47RSS13	47RSH13	-
Pyrex	49TTPM15024	150 x 24mm with rim I.D. 22mm	10	\$ 22.00	\$ 20.90	100	47RSS20	47RSH20	47RS220
Pyrex	49TTPM15016	150 x 16mm with rim I.D. 14mm	10	\$ 13.90	\$ 13.10	100	47RSS13	47RSH13	-
Pyrex	49TTP16016	160 x 16mm with rim, I.D. 13.6mm	10	\$ 14.50	\$ 13.75	100	47RSS13	47RSH13	-
Pyrex	49TTP12516	125 x 16mm with rim I.D. 14mm	10	\$ 12.00	\$ 11.40	100	47RSS13	47RSH13	-
Pyrex	49TTPR15024	150 x 24mm rimless I.D. 21.6mm	10	\$ 22.35	\$ 21.00	100	47RSS20	47RSH20	47RS220
Pyrex	49TTPR15016	150 x 16mm rimless I.D. 13.5mm	10	\$ 10.80	\$ 9.75	100	47RSS13	47RSH13	-
Pyrex	49TTPR12516	125 x 16mm rimless I.D. 13.5mm	10	\$ 10.60	\$ 9.55	100	47RSS13	47RSH13	-
Schott	49TT13014	130 x 14mm with rim I.D. 12mm	10	\$ 16.10	\$ 15.30	100	47RSS11	47RSH11	-
Schott	49TT13016	130 x 16mm with rim I.D. 13.5mm	10	\$ 17.50	\$ 16.65	100	47RSS13	47RSH13	-
Schott	49TT16016	160 x 16mm with rim I.D. 13.5mm	10	\$ 18.00	\$ 17.10	100	47RSS13	47RSH13	-
Schott	49TT15020	150 x 20mm with rim I.D. 17.5mm	10	\$ 23.00	\$ 21.85	100	47RSS15	47RSH15	47RS215
Schott	49TT15025	150 x 25mm with rim I.D. 22.5mm	10	\$ 31.00	\$ 29.50	50	47RSS20	47RSH20	47RS220
<b>PLASTIC (POLYCARBONATE) TEST TUBES:</b>									
LabServ	49TTPC15016	150 x 16mm rimless I.D. 15mm	10	\$ 5.00	\$ 4.50	n/a	47RSS13	47RSH13	-

BRAND	CAT. NO.	DESCRIPTION	BOX PRICE	BOX SIZE	RUBBER STOPPER CAT. NO.		
					SOLID	1-HOLE	2-HOLE
Kimax	49TTKR15016	150 x 16mm rimless I.D. 14mm	\$ 116.90	72	47RSS13	47RSH13	-

Many other sizes of Pyrex tubes are available with and without rim; please inquire.

## PIPETTES FILLERS .... SEE PAGE 39 - 40

### PIPETTES, GRADUATED

1 x 0.01ml	Cat. No. 49P1	\$3.20
2 x 0.01ml	Cat. No. 49P2	\$3.40
5 x 0.05ml	Cat. No. 49P5	\$4.30
10 x 0.1ml	Cat. No. 49PG10	\$5.30

### PNEUMATIC TROUGH



Glass trough 240mm diameter x 125mm high for the collection of gases under water with a beehive shelf. Popular size.

Cat. No. 49TP \$32.50

### SPOTTING TILES

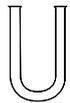


12 cavities, plastic, each

Cat. No. 48STPL \$8.60

12 cavities, porcelain, each

Cat. No. 48STP \$3.60

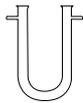


### U Form Tube

Plain 150 x 15mm, I.D. 12.5mm

Cat. No. 49TTU1

\$4.50



### U Form Tube

With sidearms 150 x 15mm, I.D. 12.5mm

Cat. No. 49TTU2

\$6.00



### Sidearm Tube

150 x 18mm, I.D. 16.5mm

Cat. No. 49TTSA

\$1.90

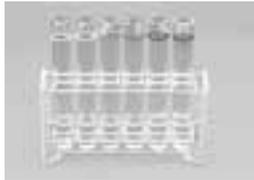
## WIRE TEST TUBE BASKET



This durable spray coated basket doubles as a test tube carrier and a handy tray insert for 25mm boiling test tubes either on the bench or tucked away neatly in a Gratnells Frame or Trolley. Capacity 108 tubes.

Cat. No. 44GWTTB

\$110.00



## TEST TUBE MARKERS

An easy means of identifying the contents of a test tube. Just slip over the rim of a test tube and the solution / sample is immediately

coded for identification using coloured Silicone rings. Very handy.

Made to fit tubes 16.5-30mm diameter. Color and quantity: Red, Pink, Orange, Yellow, Green, Blue, Black, Purple, White 9-colours, 50 each.

Cat. No. 49TTM

\$32.50

## TEST TUBE BASKETS

These handy Test Tube Baskets made of polypropylene are autoclavable, unbreakable and cannot corrode. Ideal for rinsing, draining and storage. (Stated as 'unsuitable' for dishwashers.)



140 x 120 x 110mm

Cat. No. 48TTB1

\$6.00

160 x 160 x 160mm

Cat. No. 48TTB2

\$8.80

## WATCH GLASS

60mm dia., pk/12

Cat. No. 49WG60

\$10.00

75mm dia., pk/10

Cat. No. 49WG75

\$12.00

100mm dia., pk/10

Cat. No. 49WG100

\$14.00

## TEST TUBE STORAGE



### Foam Insert for 56 Test Tubes (24mm)

Fits Gratnell F1 shallow and F2 deep trays only.

Cat. No. 44GFT56

\$12.95



### Foam Insert for 108 Test Tubes (17mm)

Fits Gratnell F1 shallow and F2 deep trays only.

Cat. No. 44GFT108

\$12.95

## ARE YOU GETTING TECHEMAIL?

*If you are not receiving the Delta Science 'Techemail' you could be missing out!*

*Techemail keeps you up to date on new products, specials, promotions, clearance sales and the like. These are available only to subscribers, so if you are not receiving Delta's Techemail, just send an email to*

*[science@deltaed.co.nz](mailto:science@deltaed.co.nz)*

*with the words*

**SUBSCRIBE TECHEMAIL**

*and we shall add that address to our mail list. Similarly, you may send*

**'UNSUBSCRIBE'**

*to be removed from the list anytime.*

## DELTA'S PRIMARY SCIENCE INVESTIGATION KITS

*Especially designed to support learning for Upper Primary level and links to the New Zealand Curriculum and the Nature of Science.*

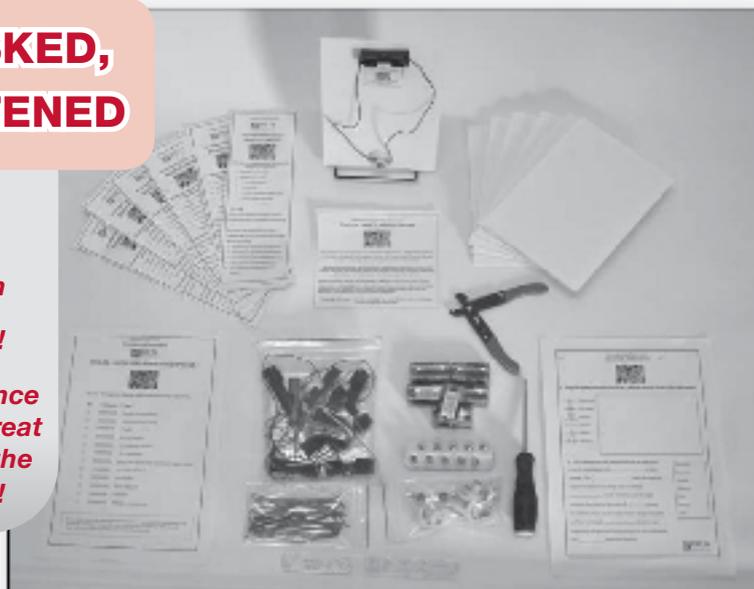
### YOU'VE ASKED, WE'VE LISTENED

*All the work has  
been done!*

*Students will learn*

*And also have fun!*

*Delta's Primary Science  
Electronics Kits: A great  
start to investigate the  
Nature of Science!*



Picture left shows the kit that build a circuit and all the components/equipment included. In this pack for up to 6 students to complete the investigation work. Each kit is packed away in a sealed off plastic bag (above).

Focusing on developing students' investigation skills, each kit contains a set of laminated 'Student Task Cards' and all the equipment needed for up to 6 students to carry out an investigation in one convenient pack.

Student  
Task  
Cards



All tasks are designed to engage small groups of students with hands-on experiences while allowing them to investigate a variety of science concepts in a safe and structured environment.

A corresponding 'Student Worksheet' is supplied with each pack to reinforce the science ideas and concepts behind each 'Student Task Card'. **(Teacher's answer sheet included)**



Student  
Work  
Sheets

### COLLABORATIVE LEARNING AT ITS BEST

Our kits are designed to support collaborative learning in the classroom. Each pack comes with a set of easy-to-follow student instructions that younger students can use as a guide as they work through their investigations.

Setup is simple as small groups of students work together using the kits to build and explore circuits, batteries and switches.

### EASY TO USE CHECKLIST

Every Student Investigation Kit contains a laminated checklist to cross check off equipment in the pack, ensuring that the kit is complete for the next group of students to use.



**FREE** 'Student Reading Pages' for every Electronics Investigation Pack ordered. Suitable for Upper Primary level, the 'Student Reading Pages' provide learners with background information about a range of science concepts relating to electricity. The 'Student Reading Pages' correlate to the 'Student Task Cards' and 'Student Work Sheets' providing opportunities for the students to reinforce the Learning Objectives from the Student Investigation Kits.



Student Reading Pages

See Prices Page 62

### ELECTRONICS INVESTIGATION KIT #1

#### Build a Circuit

This pack comes with activity cards and resources for students to investigate the most effective way of building a circuit to light up their bulbs.



Cat. No. 26PSE1	1	3+	6+
<b>EACH PRICE</b>	<b>\$37.00</b>	<b>\$34.90</b>	<b>\$32.80</b>

### ELECTRONICS INVESTIGATION KIT #2

#### Design a Switch

This pack comes with activity cards and resources for students to use their problem solving skills to design a switch that swivels, twists or hinges to connect their circuits and sound their buzzers.



Cat. No. 26PSE2	1	3+	6+
<b>EACH PRICE</b>	<b>\$42.90</b>	<b>\$40.60</b>	<b>\$37.70</b>

### ELECTRONICS INVESTIGATION KIT #3

#### Build a Battery

This pack comes with activity cards and resources for students to investigate the elements of a simple battery, by using copper wire, zinc nails and vinegar. Equipment is provided to test it out with a simple circuit. (Vinegar not included)



Cat. No. 26PSE3	1	3+	6+
<b>EACH PRICE</b>	<b>\$32.60</b>	<b>\$30.90</b>	<b>\$29.20</b>

### ELECTRONICS INVESTIGATION KIT #4

#### Best Conductor

This pack comes with activity cards and resources for students to build a circuit with probes that can test a range of objects. Metal sample kit is supplied within this pack for students to investigate the conducting properties of various metals.



Cat. No. 26PSE4	1	3+	6+
<b>EACH PRICE</b>	<b>\$35.60</b>	<b>\$33.70</b>	<b>\$31.90</b>

### ELECTRONICS INVESTIGATION KIT #5

#### Series vs Parallel

This pack comes with activity cards and resources for students to build and compare series and parallel circuits. Once constructed, the differences in energy flow can be observed as the bulbs glow at different strengths along the two circuits.



Cat. No. 26PSE5	1	3+	6+
<b>EACH PRICE</b>	<b>\$42.90</b>	<b>\$40.60</b>	<b>\$37.70</b>

### ELECTRONICS INVESTIGATION KIT #6

#### Construct an Electromagnet

This pack comes with activity cards and resources for students to manually construct an electromagnet from scratch and observe the effects of the magnetic field using a compass.



Cat. No. 26PSE6	1	3+	6+
<b>EACH PRICE</b>	<b>\$40.90</b>	<b>\$38.70</b>	<b>\$36.80</b>

## RUBBER MAT AIR PRESSURE DEMONSTRATION, ('Gompita-kun')

Gompita-kun loosely translates from Japanese as 'Sticky Rubber Boy'!

Students can gain an appreciation of how heavy the atmospheric pressure is when they try to lift this mat. When placed on a smooth surface such as a table or similar it is a challenge to pull it up! Size of the rubber mat is approximately 900 square cm, which means it is held down by air weighing 900kg. Specifications: Mat: ~300 x 300 x 3mm, Handle: ~30mm Diameter, Weight: ~450g.



Cat. No. 45RM \$54.00

## AIR TRACK

Air Track may be used to perform numerous experiments easily and accurately with almost the total absence of frictional errors. A long anodised aluminum track of special shape and proportions is mounted and aligned on a sub-



base (optional). Various gliders, which float to and fro on the air cushion, together with a large number of attachments are provided to cover the largest range of experiments. All attachments and gliders relate to a special weight system, so that for many experiments the use of a weighing balance is not necessary. The various parameters of experiments may be recorded permanently by using the effective and safe photogates and timer. Track and attachments are packed in kit form complete with a comprehensive instruction book.

Economy type Air Track without sub base or air source. Kit of parts included. 2 metres long requires air source.

Cat. No. 45ATE \$940.00

Air track photogates (2) & cables w/out timer.

Cat. No. 45ATPG \$295.00

Timer for photogates, LED, 6 digit, 999.999s x 0.1ms. 12V AC/DC & Power Pack

Cat. No. 45ATPGT \$425.00



## AIR SOURCE

Air Source, variable speed for Air Table / Track, 240V AC.

Cat. No. 45ATAS \$375.00

## ALLIGATOR CLIPS

Insulated shank, Black, 4mm

Cat. No. 47ACB4 \$0.60



Insulated shank, Red, 4mm

Cat. No. 47ACR4 \$0.60



Plain shank and screw, 4mm

Cat. No. 47ACP4 \$0.60



## ALLIGATOR CLIP LEAD



Alligator Clip Lead, set of 10 assorted colours with 50mm long Shrouded Alligator clip at each end for simple, quick circuit connection. Overall length 480mm.

Cat. No. 48ACL8 \$10.90

## BALANCE, SPRING, Scale in Newtons and grams. Flat Type, Plastic Body



1+/- 0.02N, 100+/- 2g Cat. No. 48BSN1 \$4.30

5+/- 0.1N, 500+/- 10g Cat. No. 48BSN5 \$4.30

10+/- 0.2N, 1000+/- 20g Cat. No. 48BSN10 \$4.30

20+/- 0.4N, 2000+/- 40g Cat. No. 48BSN20 \$4.30

50+/- 1N, 5+/- 0.1kg Cat. No. 48BSN50 \$4.30

100+/- 2N, 10kg+/- 200g Cat. No. 48BSN100 \$4.30



### Tubular Type, Aluminium

1+/- 0.02N, 100+/- 2g Cat. No. 48BT1 \$6.95

2+/- 0.04N, 200+/- 4g Cat. No. 48BT2 \$6.95

5+/- 0.1N, 500+/- 10g Cat. No. 48BT5 \$6.95

10+/- 0.2N, 1000+/- 20g Cat. No. 48BT10 \$6.95

20+/- 0.4N, 2000+/- 40g Cat. No. 48BT20 \$6.95

50+/- 1N, 5+/- 0.1kg Cat. No. 48BT50 \$6.95



### Tubular Type, Plastic, Transparent

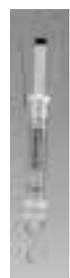
1+/- 0.02N, 100+/-2g Cat. No. 48BTP1 \$9.20

5+/- 0.1N, 500+/-10g Cat. No. 48BTP5 \$9.20

10+/- 0.2N, 1000+/-20g Cat. No. 48BTP10 \$9.20

20+/- 0.4N, 2000+/-40g Cat. No. 48BTP20 \$9.20

50+/- 1N, 5+/-0.1kg Cat. No. 48BTP50 \$9.20



### Tubular Type, Push-Pull

2.5 x 0.05 N, /250g Cat. No. 48BTTP2 \$16.50

5 x 0.1 N, /500g Cat. No. 48BTTP5 \$16.50

10 x 0.2 N, /1000g Cat. No. 48BTTP10 \$16.50

20 x 0.4 N, /2000 Cat. No. 48BTTP20 \$16.50

50x 1 N, /5kg Cat. No. 48BTTP50 \$16.50

## BALLS

### Happy and Unhappy

Two identical balls have virtually the same mass, density and appearance, but when thrown down, one bounces back while the other hits the surface and lies there. Why?



Comes complete with instructions.

Cat. No. 48HU \$15.00

### BALL & RING

**Single Handle Type**, also known as Gravesande's.

A metal ring with accurately machined hole, mounted on a rod with an insulated handle. A close fitting metal ball is attached to the rod by a brass chain. When ball is heated expansion prevents it from passing through the hole. Overall length: 215mm



Cat. No. 43BR20 **\$11.50**



#### Separate Handles Type

Easier to operate than the single handle type.

Cat. No. 43BRH **\$17.00**

### BANANA PLUGS (supplied as equal quantities of red and black unless otherwise specified)

Non-solder type, non-screw 4mm piggy back stackable.



Cat. No. 47BPS4 **\$1.25**

4mm solder type

Cat. No. 47BP4 **\$0.89**



4mm side stackable, screw fixture.

Cat. No. 47BPP4 **\$1.10**



### CABLE (WIRE), for making Banana Cables

Quality insulated multi-Strand (~40 strand) copper wire for making banana cables with our banana plugs above (47BPS4, etc) Sold by the metre.

Black Cable **Cat. No. 47BPCB \$1.40**

Red Cable **Cat. No. 47BPCR \$1.40**

### BANANA CABLES



PVC shielded cable, 4mm banana plugs, cable is soldered onto plug and fixed by screw, pair, one red, one black, 470mm. Our alligator clips 47ACB4/R4 fit onto these leads.

Cat. No. 47TLP2 **\$5.80**



PVC shielded cable, 4mm banana plugs, plug is soldered on, pair, one red, one black, 600mm. Our alligator clips 47ACB4/R4 fit onto these leads.

Cat. No. 47TLP3 **\$5.45**

### BANANA SOCKETS

4mm. 125VAC, 5A



Black **Cat. No. 47BSB \$0.98**

Red **Cat. No. 47BSR \$0.98**

### BAR & GAUGE

Linear & diametrical expansion demonstration. Brass construction with insulated handle. The bar fits the gauge accurately for both length and diameter. To show expansion in two dimensions due to heating. Bar length 83mm.



Cat. No. 43BG210 **\$18.00**

### BAR BREAKER APPARATUS, I.E.C.

Sturdy, enamel-finished apparatus demonstrates the forces generated during expansion or contraction of metal. Can be used in either heating or cooling mode. A cast iron rod which is passed through a steel bar and locked against the cast body breaks upon expansion or contraction. Complete with integral gas burner and pack of 10 rods.



Natural Gas **Cat. No. 43BBN \$220.00**

LPG **Cat. No. 43BBL \$220.00**

Spare Rods, pk10 **Cat. No. 43BBR \$16.00**

### BAROMETER



#### Aneroid

Demonstration type 100mm dia.

Cat. No. 44B100 **\$50.80**

### BATTERY HOLDER



Holds one D-SIZE battery. Can be stacked end to end or side to side via convenient fittings on the sides and ends.

Cat. No. 25BH20 **\$2.40**

AA SIZE, Double

Cat. No. 25BH6 **\$1.10**

### BELL



Electric Demonstration Type 3V DC Mounted on base with terminals. 75mm. Appearance and lay-out may vary from photo.

Cat. No. 48BELL **\$34.70**

### BELL IN VACUUM APPARATUS



A battery-operated electric bell 3-6V conveniently mounted on the vacuum plate which is fitted with stopcock. Vacuum pump not included. (See Cat. 45VPE vacuum pump this catalogue.)

Tip: To hear the bell we suggest the air be evacuated first, switch

off the pump & allow air slowly into the jar; ringing will increase in volume as air enters. This alleviates interference from pump motor noise.

Cat. No. 46BVA **\$162.00**



Vacuum Pump Plate (only) 200mm diameter.  
(for users with their own bell jar)

Cat. No. 46BJVP \$130.00

## BIOT'S APPARATUS



A spherical conductor on an insulated stand with two hollow hemi-spheres, each with insulated handle, to show that electrostatic charge resides on the outer surface.

Cat. No. 42BA \$18.00

## BOYLE'S LAW APPARATUS

### SYRINGE TYPE



Simple type consisting of a 60ml syringe attached so that application of weight causes compression of air. Air bleed cord provided. Overall height: 180mm  
Base: 100 x 100

Cat. No. 45BLS \$60.00

## CALORIMETER CUP, BOX and LID ONLY



Box and Lid for Calorimeter Cup is constructed from styrene foam to provide superior heat insulation. Lid has hole for thermometer. Fits 50mm dia. plain or Joule's calorimeters neatly.

Cat. 43CCBL \$9.50

## CALORIMETER CUPS, INNER / OUTER PAIR With Lid & Stirrer



Two copper calorimeter cups with rolled rims. Small cup is inserted into the larger cup fitted with a removable foam insulation block. A plastic lid with thermometer hole and slit is used to cover the cups. Complete with simple wire stirrer.

Small: 51 x 77mm, Weight 65g.

Large: 76 x 103mm, Weight 110g.

Cat. No. 43CCIS \$49.20

## CALORIMETER CUP



Seamless polished copper cup with rolled rim and polished nickel plate finish.  
Size: 50 x 75mm, Weight 65g.

Cat. No. 43CCN \$14.25

## CALORIMETER, JOULE'S

For Determination of Joule's Equivalent. Calorimeter Cup 50mm dia. fitted with a plastic lid supporting two nickel plated brass stems connected to a heating coil of 2 Ohms resistance. The lid is fitted with insulated 4mm socket captive head terminals for connection to 6V. Complete with robust and insulated stirrer. Fits Cat. 43CCBL. Dimensions: 50 dia. x 75mm. Weight: 135g.



Cat. No. 43CJ \$39.50

## HEATER BLOCKS, CALORIMETERS

For the experimental determination of the specific heat capacity of different metals. Cylindrical metal blocks, mass 1kg adjusted to an accuracy of +/- 2%. Each block is drilled with two holes, a large central hole 12.5mm diameter for a special immersion heater (see below) and a smaller hole 7.5 mm diameter for a thermometer or temperature sensor.

Aluminium 100mm long x 70mm dia (each)

Cat. No. 43CHBA \$69.50

Copper 102mm long x 40mm dia (each)

Cat. No. 43CHBC \$106.00



Steel 115mm long x 40mm dia (each)

Cat. No. 43CHBS \$36.00

Brass 108mm long x 40mm dia (each)

Cat. No. 43CHBR \$75.50

## HEATER, IMMERSION

A sheathed miniature heater specially designed for use with metal block calorimeters. Electrical connection is via 300mm leads with heat resisting insulation terminating in 4mm sockets. 12V/50W.



Cat. No. 43IH \$44.00

## CATHODE RAY TUBES:

All require an induction coil or EHV (Extra High Voltage) power supply to operate (See Cat. No. 42IC). Each has anode and cathode terminals.

### CATHODE RAY TUBE, DEFLECTION



Demonstrates that cathode rays deflect in magnetic field. Bring a magnet close to the bright image on the plate and see the rays deflect.

Cat. No. 42CRTD \$105.00

### CATHODE RAY TUBE, PADDLE WHEEL



Demonstrates that cathode rays have kinetic energy. Blades of the paddle wheel move when struck by electrons.

Cat. No. 42CRTP \$138.00

### CATHODE RAY TUBE, MALTESE CROSS



Demonstrates that cathode rays move in a straight line.

Cat. No. 42CRTM **\$106.00**

### CIRCUIT BOARD KIT 'Worcester' Type

For experiments in simple series and parallel circuits, heating and magnetic effects of a current, rectifiers, resistors, globe, electroplating etc.



Battery operated with large kit of parts which are quickly connected without use of wires. Base board 300 x 300mm with holders for 3 'D' cells and matrix of strong pins for circuit components. Connections clip into place, so mistakes are easily seen and corrected. Simple electrical circuits and basic electroplating can be explored by the junior student. Kit dimensions: 390 x 310 x 70mm

I.E.C. Brand **Cat. No. 48CB240 \$154.00**

Supertek Brand **Cat. No. 48CBW \$120.00**

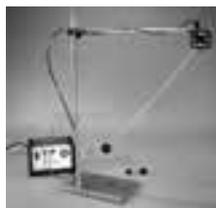
### CIRCULAR MOTION APPARATUS

#### - Mini-electric with speed controller

Compact with low torque for accurate experiments.

The Circular Motion Kit permits the swinging of a mass in a circular orbit under controlled conditions.

Measurements are made on orbit diameter, mass of the projectile and revolutions per minute. Mechanical experiments on circular motion can be performed with excellent accuracy.



Cat. No. 45CMKME **\$155.00**

### CIRCULAR MOTION KIT



#### Simple Type

Consisting of glass tube, handle, washers, cord, stopper, peg, etc.

All packed in a sturdy carton.

Cat. No. 45CMKS **\$23.60**

### CLINOMETER

Unique frame enables angles to be measured by placing the instrument on a slope or against vertical surfaces. The height of buildings, trees etc. can be calculated by aligning the clinometer sights with the top of the object to measure the angle of elevation and then measuring the distance from the object.



Cat. No. 13CL **1-4 \$32.00**

**5+ \$29.65**

### CLOUD BOTTLE



Making a cloud with this palm-sized pump is easy. Remove the top and put a few drops of water inside the bottle. Add pressure using the pump, lift off the top and the cloud forms instantly inside the bottle! A Liquid Crystal thermometer strip

records temperature changes during the experiment. What is the effect on water of temperature and pressure changes? Specifications: PET Bottle is Heat-resistant to 60°C, LC temperature strip: 10 to 32°C.

Cat. No. 45CB **\$17.50**

### CLOUD CHAMBER, WILSON'S

Wilson's pattern cloud chamber consists of a clear acrylic chamber 100x25mm (DxH) with o-ring seals and a plate glass cover. It is mounted on an anodized aluminium base and is easily removable. It is fitted



with a 4mm high voltage socket connected to a circular electrode inside the chamber for the 'clearing' fluid. A felt pad absorbs alcohol to provide the supersaturated vapour which condenses on the paths taken by the radioactive particles. A fitting is provided for puffing thorium-contaminated air. Complete with metal pin and mounting for radioactive point source. Supplied with support rod, squeeze bottle, tubing, mohr clip, simple vacuum pump and instructions. Does not include radioactive materials. 135 x 70 x 420mm, 1.1kg.

Cat. No. 44WCC **\$595.00**

Radioactive source (Alpha + Beta) on pinhead

Cat. No. 44WCCR **\$345.00**

### COLLISION APPARATUS FOR KINETIC ENERGY (with BeeSpi V)

This apparatus includes a 'Horizontal Ball Launcher' and BeeSpi V for measuring velocity of the launched ball. The kinetic energy change, depending on the



velocity of the ball, can be quantitatively obtained by measuring the distance moved by the sliding wooden block after the collision of the horizontally launched ball on the guide rail. Specifications:

3 Balls: Metal, Ceramics, Plastic (~ 25mm)

Size: ~ 1,155 x 80 x 70mm

Guiding rail: Plastic, length: ~ 1,000mm

Launcher: 3 levels of launch speed

Sliding block: Wood block ~ 15 x 100 x 40mm

Velocity Accessory: BeeSpi V

Cat. No. 45CAKE **\$494.00**

### COLLISION IN 2 DIMENSIONS

Supplied with new type of unbreakable track for ball acceleration.

#### Kit Contents:

- 1 pc Steel base with ball support arrangement to clamp to table top. Carries plastic track.
- 1 pc Plastic track to curve and to fit into steel base.
- 2 pcs Steel ball 16mm diameter.

- 1 pc Glass ball 16mm diameter.
- 1 pc Plumb line to find position on floor directly below ball support arrangement.
- 1 pc Screw eye to hang from plumb line.



Cat. No. 45C2 **\$42.75**

### COMPOUND BAR (Bimetallic strip)

Bonded 150 x 12mm with handle. Made by I.E.C.



Cat. No. 43CB881 **\$15.40**

### CONDUCTIVITY RING

Four strips, one each of copper, brass, iron, and aluminium, mounted on a metal ring.

Depressions in the outside tips of these strips carry small pieces of wax. The observation of the wax melting correlates to the thermal conductivity of the different metals.

Diameter of ring 120mm. Length of each strip 130mm.



With metal ring Cat. No. 43CR910 **\$40.00**

With hardboard ring Cat. No. 43CRE **\$18.00**

### CONDUCTIVITY BARS

These Thermal Conductivity Bars aided by liquid crystal thermometer strips demonstrate the various rates of temperature conduction of different metals.

Simply dip in hot water. Contains steel, brass, aluminum, and copper bars. Enclosed in a plastic housing.



Cat. No. 43CB **\$42.00**

### CONSTANT SPEED VEHICLE



Some sort of crawler has long been a favourite for exploring the concepts of velocity and acceleration. This vehicle features a three position switch allowing it to be powered in either direction, a stable

platform for carrying objects, a hook for towing and blunt ends for pushing. A spacer is included to take the place of one battery for half speed operation. Takes 2 C-size batteries (not included). Cat. No. 45CSV **\$62.80**

### CONVECTION IN AIR APPARATUS



A metal box with two glass chimneys and a candle holder under each chimney. When the candles are lit and the glass doors closed, a convection current is seen. 220x255x90mm.

Cat. No. 43CAA **\$52.00**

Spare chimney Cat. No. 43CAAC **\$14.00**



### CONVECTION IN WATER APPARATUS

A 350 x 200mm rectangular borosilicate glass tube form with a short funnel at the top. Can be used to demonstrate heat convection in water.

Cat. No. 43CW **\$24.00**

### COPPER FOIL TAPE

Use to layout prototype circuits on cardboard or wood, self adhesive backing is strong, copper side very easy to solder. 50 metre roll 5.5mm W x 1 mm thick (0.2mm Foil)



Cat. No.25HW0088 **\$19.60**

### CUBE SETS



Set of 6. Each a different metal including Iron, Brass, Lead, Copper, Aluminum and Zinc. Each cube has a 1cm edge.

Cat. No.48C6 **\$12.75**



Density Cubes 25mm<sup>2</sup>, case/10. Study density, mass, volume, buoyancy, specific gravity and floatation. Set/10: aluminium, copper, nylon, PVC, steel, acrylic, pine, brass, oak and poplar.

Cat. No.48DS25 **\$49.00**

### CURRENT BALANCE KIT

Small, PSSC. For investigating the forces between magnetic fields and a current-carrying-wire.



Balance Kit plus Solenoid Cat. No. 42CBK **\$195.00**

Balance Kit only Cat. No. 42CBK0 **\$94.60**

### DIFFRACTION GRATING



Three gratings on a card slide, mounted between glass plates. 100, 300, 600 lines per mm.

Cat. No. 47DK3X **\$63.50**

### DIFFRACTION TRANSPARENCIES

#### Double slit

Diffraction transparency, set of DOUBLE SLITS. All slits are 0.025mm wide. Upper row: 0.175, 0.150, 0.125, 0.100, 0.075, 0.050mm pitch, centre to centre. Lower row: 0.325, 0.300, 0.275, 0.250, 0.225, 0.200mm pitch, centre to centre. Cat. No. 47DKTDS **\$10.20**

#### Single slit

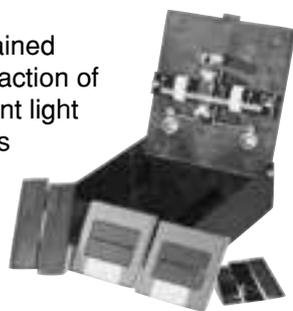
Diffraction transparency, set of SINGLE SLITS. Slit widths: Upper row, 'A' to 'F': 0.025, 0.050, 0.075, 0.100, 0.125, 0.150mm Lower row, 'G' to 'L': 0.175, 0.200, 0.225, 0.250, 0.275, 0.300mm.



Cat. No. 47DKTSS **\$10.20**

### DIFFRACTION KIT

Unique, compact, and self-contained device to perform important diffraction of light experiments. A monofilament light source is viewed through various types of single, double and adjustable slits. The light may be coloured by the filters supplied and, by measuring the diffraction pattern, the frequency of the light may be measured. Complete with instruction leaflet.



Cat. No. 43DK1670 **\$64.50**

Spare lamp

Cat. No. 43DKL631 **\$4.40**

### DRINKING BIRD

The drinking bird is a heat engine that exploits a temperature differential to convert heat energy to a pressure differential within the device, and perform mechanical work. A fun demonstration of the principles of heat of vaporization, ideal gas law and vapour pressure. For 12 years and up/adult supervision, do not ingest, flammable. Approximately 19cm tall.

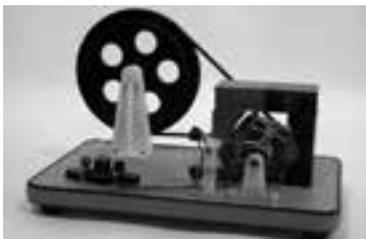
**NEW**  
Product



Cat. No. 43DB **\$19.80**

### DYNAMO AC/DC

For demonstrating the construction and basic working principle behind an AC & DC dynamo. Simply moved the brushes to produce AC or DC. Voltage output unloaded > 8V, loaded > 4.5V. Very popular!



Cat. No. 42DYN **\$148.00**

Spare Belt

Cat. No. 42DYNB **\$14.00**

### GROUND LIQUEFACTION EXPERIMENT BOTTLE

By using a PET bottle students can in a short time repeat the ground liquefaction experiment, especially the 'sand boil' phenomena which is one of the causes of great damage during a large earthquake. Kit Contents: 3 types of grain with different size, PET bottle (600ml), Experiment instructions.



Cat. No. 45GLEB **\$14.00**

### EARTH CRUST LIQUEFACTION EXPERIMENT BOTTLE

This kit's theme centers on what gets reported in the news and everyone talks about when a big earthquake happens, - the liquefaction of the Earth's crust. With this kit, students can replicate the phenomenon of a manhole cover underground rising to



the surface. Through the experiment, students can learn, in an amusing way, about the liquefaction phenomena. Kit Contents: PET bottle 4pcs (may differ from that pictured), Sand 1kg, Pin 20pcs, Paper cup 4pcs.

Cat. No. 45ECLB **\$52.00**

### ELECTROMAGNET, I.E.C.

'U' Core & Armature. Student type, with 10mm diameter iron U core with two coils of copper wire. These may be connected to a 12V DC supply.



Unit comes complete with armature, lifting hooks and 4mm spin free socket terminals. Dimensions 100 x 100mm

Cat. No. 42EMUC182 **\$85.00**

### ELECTROMAGNET, U-SHAPE



Electromagnet with U-core armature and 4mm terminals on each arm. 4-6V, 1A.

Cat. No. 42EMUE **\$37.50**

### ELECTROSCOPES

#### COULOMB METER, Digital

The Coulomb meter is a digital instrument that can replace the traditional electroscope. It measures electrical charge or the quantity of electricity. By definition, one Coulomb is the quantity of electricity equivalent to 1x amp / second (one amp flowing for exactly one second). The amount of charge on an electron inside an atom is 1.602 x 10<sup>-19</sup> Coulombs. The Coulomb Meter can measure up to 1,999 nC (nanoCoulombs). Note: 1x nC = 10<sup>-9</sup> Coulombs. In the Coulomb Meter, a 1uF capacitor is charged by the amount of electricity passed into the terminals. As the amount of electricity or charge increases inside the capacitor, its voltage rises. This electricity may be in the form of current flowing through a resistor from a battery or other power source or from static electricity on an electrostatic rod discharged into the terminal etc. The charge rises and falls in a similar manner to the vane of an electroscope but, unlike an electroscope, the Coulomb Meter operates at very low voltages.



Cat. No. 42CM **\$138.00**



Gold in metal housing.

Cat. No. 42EGL **\$78.00**

Gold leaf, spare leaves. Pack of 3.

Cat. No. 42ESL3 **\$10.00**



Metal vane type in metal housing.

Cat. No. 42EMV **\$63.20**



Polarity Detecting Type  
Not only detects but identifies positive & negative charges. When charged rod moves towards the Electroscopie one of the two LED's glow. Red indicates positive and Green indicates negative. A unique Electroscopie! Electrostatic charges can be now verified. Simple to use.



**Cat. No. 42EPD** \$49.00  
**Cat. No. 42ESF** \$25.00

### ELECTROSTATIC RODS

Approximately 300 x 12mm

Acrylic (pos.)	<b>Cat. No. 42ERA</b>	<b>\$5.90</b>
Ebonite (neg.)	<b>Cat. No. 42ERE</b>	<b>\$5.90</b>
Glass (pos.)	<b>Cat. No. 42ERG</b>	<b>\$5.90</b>
Polythene (neg.)	<b>Cat. No. 42ERP</b>	<b>\$5.90</b>
Half Brass, Half Ebonite	<b>Cat. No. 42ERBE</b>	<b>\$8.80</b>
Half Brass, Half Glass	<b>Cat. No. 42ERBG</b>	<b>\$8.80</b>

### ELECTROSTATICS KIT

A simple kit for student investigations into electrostatic forces. Kit includes polystyrene balls, cotton cloth, wollen cloth, wooden clothes peg, nylon filament, small paint brush, graphite in alcohol, insulators, pins, acetate strip and vinyl strip. Dimensions: 210 x 100 x 70mm



**Cat. No. 42EK177** \$59.20

### ENGINE, HERO'S (EOLIPILE)



Borosilicate glass bulb 70mm diameter with side arms bent at right angles and formed into jets at their tips. Bulb is mounted on a metal stand leaving it free to rotate about its horizontal axis. If a small amount of water is introduced into the bulb and boiled, the released steam causes rapid rotation. Complete with stand, but without burner.

**Cat. No. 43EH** \$30.00

Spare glass engine **Cat. No. 43EHG** \$15.20

### E/M APPARATUS (without power supply)



The modern version of Narika's e/m Apparatus allows students to experiment and clearly observe the effects of electric and magnetic fields on an electron stream. The ratio of charge over mass for an electron can be calculated using the diameter of the circular path, the current applied to the Helmholtz coils and the voltage used to

accelerate the electrons. Built-in scale is a phosphor coated engraved glass ruler. This eliminates parallax when making precise diameter readings of the electron orbit.

#### Specifications:

Vacuum Tube: 150mm diameter, Helium gas, built-in integrated phosphor scale.  
Helmholtz Coil: 300mm diameter, 1mm wire 130 turns, 2 parallel mounted coils with variable resistors to adjust current.  
Anode Voltage: 200-500V  
Heater: 6.3V Helmholtz Coil: DC 0-15V, 3A  
Size: 370x255x390mm  
Weight: 7.4kg

**Cat. No. 42EMA** \$2,350.00

### FIRE PISTON



Demonstrates that heat is one result of compression in a closed gaseous system. When the plunger is pushed firmly into the shielded cylinder, a wisp of cotton is ignited. Device is sturdily and safely built.

**Cat. No. 43FP** \$45.00

### FOUNTAIN CONNECTION

We provide the connections and tubes, you provide two 2 litre plastic bottles and water. Then you have the workings of a simple vacuum and compression demonstration. Once operating, the resulting fountain seems to defy logic and the laws of nature. However these simple components show, for example how coffee percolators work.



**Cat. No. 43FC** \$9.55

### FREE & ANGULAR FALL MOTION APPARATUS

This apparatus is specially designed for experiments involving velocity and acceleration in free fall motion and angular motion. Experimental conditions are adjustable to multiple angles not only for free fall but also for motion on a slope. Two BeeSpi V's are supplied with this equipment, providing you with V1 and V2 to calculate acceleration.



#### Kit Contents:

- G-Gauge ME-K : x 1
- BeeSpi V : x 2
- Steel ball: x 1 (25mm diam.)
- Screwdriver : x 1

#### Specifications

Size: ~ 1100 x 100 x 145 mm  
Scale: ~960 mm



Angle: 0-90 degrees **Cat. No. 45GG** \$234.00

PHYSICS

## FUEL CELL TECHNOLOGY (STEM)

### H-RACER 2.0

Experience the automotive technology of the future by building and driving your own hydrogen fuel cell car. The transparent casing and LED lighting of the car and the hydrogen refuelling station allow you to watch the process of electrolysis and the conversion of hydrogen into electrical energy. H-Racer 2.0 replicates the ease and convenience of real-scale hybrid car refuelling— an introduction to the hydrogen refuelling station network currently being constructed across Europe and the United States.



Cat. No. 42HR **\$243.75**

### I-H2GO SOLAR / FUEL CELL CAR

Drive the most technologically advanced toy car on the market. Harness the power of sunlight to charge the hydrogen refuelling station via the solar panel. Use the station to generate hydrogen through water electrolysis, refuel the car and to charge up the super capacitor. Transparent casing and LED lights are designed to highlight all these electrochemical processes— the same processes as in real-scale hybrid vehicles. Fuel cell technology converts hydrogen to electrical energy and the super capacitor engages when the car accelerates. Control the car from your iPhone or iPad and engage gyro-steering to turn the i-H2GO's wheels simply by tilting your device.



Cat. No. 42H2GO **\$299.00**

### SOLAR HYDROGEN EDUCATION KIT

Invent your own clean energy applications using fuel cells and the power of the sun. Generate hydrogen in a completely sustainable process by using a solar panel to power water electrolysis. Convert hydrogen into electrical energy with the PEM fuel cell and power your applications. As a starting-off point for would-be inventors, the kit comes with a small electric motor and propeller blade.



Cat. No. 42SHE **\$156.00**

### ETHANOL FUEL CELL SCIENCE KIT

The Horizon Ethanol Fuel Cell Science Kit shows the workings of a direct ethanol fuel cell and the principles behind the conversion of ethanol into electrical energy through oxidization. Begin the process in the ethanol/ water mix container then transfer this solution into the fuel cell via silicon tubing where it will be converted into electrical energy to power a mini turbine. A demonstration of the future of fuel cell technology before your eyes.



- Understand the workings of an ethanol fuel cell
- pH paper shows change of property of the consumed ethanol fuel
- Includes experiment guide on CD, as well as a complete manual
- Fuel solution can be made with household items

Cat. No. 42EFC **\$236.00**

### THERMAL POWER SCIENCE KIT

Now you can generate electricity using nothing more than a combination of hot and cold water and a special conversion cell. As the temperature evens out between the two containers of water, the power level reduces. LED and mini turbines demonstrate the variance in the electrical power being generated and there are two thermometers to keep track of the temperature levels.



Cat. No. 42TPS **\$255.00**

### FUSES

- Fuse, 1A Slow Blow, Pk 6 Cat. No. 48FSB1A **\$6.90**
- Fuse, 500ma, Fast Blow, Pk 6 Cat. No. 48FFB500 **\$0.60**
- Fuse, 1.6A Fast Blow, Each Cat. No. 48FFB16 **\$0.70**

### GEIGER COUNTER & RATEMETER

This I.E.C. unit is portable, battery operated and has a built in GM Tube. Microprocessor controlled and fully portable for field use. Will count Alpha, Beta and Gamma particles over preset period of 10, 60, 100 seconds and also measure counting rate per second or per minute. Maximum counting rate is 10kHz. Audible click for each particle count. LCD display. Runs on three 'AA' batteries. Optional plug pack. High voltage for the GM tube is fully adjustable from 300 to 500V DC. Full instructions printed on case for convenience. Size 193 x 100 x 35mm



Cat. No. 44GCR **\$740.00**

## RADIOACTIVE "MAGIC SOURCE"

A unique product from I.E.C. this instrument simulates a genuine radioactive source but has none of the dangers associated with real radioactivity. Used for determining half life, for discovering the Exponential function 'e' and also for experiments in random numbers and Poisson's distribution curve. Supplied with excellent teacher notes and classroom worksheets.



Cat. No. 44RMS **\$320.00**

## GENERATOR/DYNAMO

Refer to Dynamo



## NARIKA GENECONS

See the Delta website for further details on all the Genecons and Accessories below. Also visit the

Narika website for helpful and interesting video clips at <http://global.narika.jp/product>.

### Genecon V3

The world's best-seller that has changed the image of science electronics experiments and introduces students to manually generating electricity. Turning the handle causes the motor to operate which generates a safe and easy-to-use 3V (approximately) voltage. Easy to use for students and teachers alike with adapter variations available in addition to cables. Output : Max DC 3V, Size: 115x140x43mm, 1m Cable.



Cat. No. 42GV3 **\$32.00**

### Genecon DUE

Similar to the V3, the Genecon DUE is an educational instrument perfectly suited to experiments that explain the mechanism of power generation in an easy and fun way. The clear body allows the mechanism to be seen while in use. The DUE is equipped with a special high-quality Genecon motor. A wide range of modules are also available to broaden the scope of possible experiments. Out Put : Max DC 12V, Material : Polycarbonate resin, Cable : 1m modified cable 1 pcs, Size: 115x140x43mm, Weight : 120g



Cat. No. 42GDUE **\$32.00**

### Genecon DUE with Pulley

Makes the study of Energy Conversion easy! A Genecon DUE with a Pulley mounted in it allows students to FEEL the conversion of Electrical energy to Work to Positional energy right in the hand.



Cat. No. 42GDP **\$64.25**

## Accessories COMPATIBLE for BOTH Genecon V3 & Genecon DUE

### Coils

Pack/6 Bobbins, 0.4mm enamelled wire, steel core bar 6.5 x 70mm for electromagnetism experiments.



Cat. No. 42GCO **\$142.00**

### Mini Lamp Base w-Alligator Leads

Robust high quality lamp station. (NOTE: As DUE can create up to 12V, be more careful with the speed of handle rotation, so as not to blow the 3.8V bulb).



Cat. No. 42GL **\$6.70**



### Parallel Bulb Base with 4 Bulbs

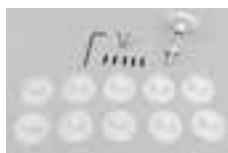
Cat. No. 42GV3B **\$55.00**

### Compass in Oil

Allows a simplified Oersted Experiment using Genecon V3. The needle of compass moves when placed on the lead (wire) of Genecon V3 by the magnetic field around the lead. And when you change the rotation direction of the handle, the needle is moved the other way.



Cat. No. 42CIO **\$16.80**



### Spare Gear Set For V3 & DUE

Cat. No. 42GG **\$15.50**

### Electromagnet Experiment Set

This kit consists of 3 sets of two types of solenoid coils and four types of core material.

Contents:

3x Wound (100 times) solenoid Coils, 3x Wound (200 times)

solenoid Coils, -four types of Core materials (copper, aluminum, and glass) 3 each and x6 iron, 15x O-rings.

Dimensions: 17 x 48 mm (solenoid Coil), 5 mm x 55 mm (core material)



Cat. No. 42GEE **\$149.00**

### Accessories EXCLUSIVE to Genecon V3

#### Modified Cable

for Genecon V3, Red/Black Alligator leads, 1 metre

Cat. No. 42GV3C **\$11.35**

#### Cement Resistor

10 Ohm/5W

Cat. No. 42GV3R **\$28.35**



#### Electric Melody

connect and hear the music when the handle turns.

Cat. No. 42GM **\$14.50**



### Propeller Motor

Mabuchi Motor 1.5-3VDC, 210-250mA, 75x60x105mm

Cat. No. 42GP **\$22.80**



### Light Bulb Plug-in Module

3.8V module exclusive to Genecon V3.

Cat. No. 42GVBM **\$7.90**



### White LED Module

Exclusive to Genecon V3.

Cat. No. 42GVW **\$7.50**

### Yellow LED Module Exclusive to Genecon V3.

Cat. No. 42GVY **\$9.50**

### LED with leads & alligator clips

Built-in resistor avoids damage, 1.9VDC, Intensity 1000mcd, yellow, exclusive to Genecon V3.

Cat. No. 42GVLA **\$12.80**



### Capacitor with Meter

Exclusive to Genecon V3.

Cat. No. 42GVCM **\$72.40**



### Capacitor Adapter without Meter

Exclusive to Genecon V3.

Cat. No. 42GVCA **\$19.30**



### Capacitor w/Lead, 4.7 F/2.5 V

Exclusive to Genecon V3.

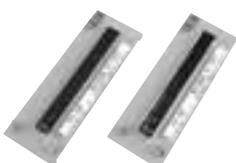
Cat. No. 42GVCL **\$15.30**



### Electromagnetic Force Device M1-S

Exclusive to Genecon V3.

Cat. No. 42GVEFD **\$52.00**



### Heat Comparison Thermometers

Exclusive to Genecon V3.

Cat. No. 42GV3T **\$75.60**

### Accessories EXCLUSIVE to Genecon DUE



### Miniature light bulb 10pcs

Cat. No. 42GDMLB **\$8.50**



### Electronic Buzzer

Cat. No. 42GD EB **\$9.15**



### Miniature LED light bulb

Cat. No. 42GDLED **\$9.30**

### Electrolysis Apparatus (6/Set)



This apparatus is used to demonstrate experiments in electrical charge/discharge and energy conversion. Use the GeneconDUE as a power source to separate water into its

component gases. The tank is moulded in one piece from clear resin with stainless steel electrodes sealed in place. Main Unit: AS resin with fixed stainless steel electrodes, Dimensions: 120x80x100mm, Inner Dimensions: 115x70x70mm, Accessories: Graduated test tubes 15x105mm (2 each), Resin test tube holder (1 each), stackable for neat, easy storage.

Cat. No. 42GDE **\$324.00**

### Exoergic Experiment Device Thermometer (6/PK)



Six-piece set including resistors and liquid crystal thermometers. Use the Genecon DUE to conduct exothermic experiments on current by connecting a liquid crystal thermometer with a resistor.

The transformation of mechanical energy is clearly demonstrated. Thermometer on Ceramics Resistor (50ohm/ 20W) with terminal on plastic base. 6 units in a pack. Range : 10-56 degC, Size : 80x50x20mm.

Cat. No. 42GDEX **\$188.00**

## GENECON DUE KIT SETS

### Genecon Energy Conversion Kit

As the GENECON is an established product for teaching general electricity to students, this kit has specially been compiled for experiments on energy conversion for your convenience. The set comes with a carrying pouch for convenient portability and includes experiment instructions.

Recommended experiments with the set:

1. Comparison of the consumption between parallel and series connection of miniature bulbs (MES lamps).
2. Conversion of potential energy to electric energy.
3. Comparison of the energy conversion efficiency.
4. Confirmation of Gravitational potential energy and mass.
5. Comparison of the work between a lifting and a falling weight.

Kit Contents:

- x1 Genecon DUE
- x1 Genecon DUE with Pulley
- x1 Genecon Holder (8mm Diam.
- x1 Series miniature bulb base
- x1 Parallel miniature bulb base
- x4 Miniature bulbs 3.8V 0.3A
- x1 String, 2m
- x1 Carrying pouch



Cat. No. 42GDEC **\$330.00**

### Electromagnetic Force Kit

This Genecon kit is for the study of electric current and magnetic field. Experiments include:

- Magnetic field to create a current (right hand rule)
- Coil magnetic field experiment
- Motor experiment
- Other Experiments with Genecon DUE



#### Kit contents:

Base Module x1, U shaped magnet x1, Support pillar x2, Disk shaped table for compass x1, Solenoid coil with plastic box x1, Hook for the swing x1, Small compass x5, Swing (a) x1, Swing (b) x1, Holder for Coil x2, Coil (motor) x1, Genecon Due x1, Battery (D type) x2, Sand paper x1, Plastic storage case . Size: 140 x 100 x 315 mm (assembled).

Cat. No.42GDEFK **\$578.80**

### ELECTROSTATIC HIGH-VOLTAGE GENECON

Reviewed and acclaimed by the U.K.'s institute of physics ,this device is similar to traditional Van De Graaf Generators used for electrical discharge experiments. Gently turn the handle to generate more than 10,000V of high voltage static electricity! A wide range of static electricity experiments is possible with the six accessories.

Until now, high-voltage static electricity generators (Van De Graff Generators) were required to carry out electrical discharge experiments with the Hamilton flywheel, Moore motor and metal collecting electrodes. The new, inexpensive Electrostatic High-Voltage Genecon now allows these experiments to be performed in the classroom with greater ease and less cost.

#### Specifications:

Output 10KV over, Size 223 x 244mm, 75mm (LxWxTh), Weight 400g, Cables : x1 each Red and Black.



Cat. No. 42EHVG **\$338.00**

### Accessories for ELECTROSTATIC HIGH-VOLTAGE GENECON:

#### Aluminum Collecting Electrode (single)

By sticking strips of moisture-resistant paper on top of the sphere, you can observe the paper strips levitating when turning the handle. The user can estimate the direction of the electric lines of force by noting the direction of the floating strips. Use this product along with the Electrostatic Genecon for a great demonstration of electrostatic electricity! Use two to demonstrate a high-voltage discharge experiment. Aluminum Sphere: 50 2mm (Diam. X Th), 115g.



Cat. No. 42ALCS **\$118.50**

### Simplified Collecting Sphere Assembly Kit for a pair

This DIY Kit makes two economical collecting spheres (Plastic hemisphere covered with Aluminum foil). The kit consists of 7 components that are assembled



to create a collecting sphere. Components include: collecting spheres with base, leads with lugs, screws and nuts for electrodes, rubber pads, aluminum tape and foil. By sticking strips of moisture-resistant paper on top of the sphere, students can observe the paper strips levitating when turning the handle. Use this product along with the Electrostatic Genecon for a great demonstration of electrostatic electricity!

#### Kit Contents:

- Plastic hemisphere with prop : 2 pcs
- Plastic hemisphere without prop : 2 pcs
- Cable : Red & Black 1 each
- Screw (3mmD) & nut 2pcs
- Rubber foot : 8 pcs
- Aluminium foil :2 pcs

Cat. No. 42CSP **\$88.80**

### Electric Pendulum

An experimental component used with the Electrostatic High-Voltage Genecon. A black pendulum ball swings backward and forward between two electrodes electrically charged at high voltage.



- Size : 50mmD
- Material : Body -Acrylic acid resin, Electrode -Copper
- Ball : Carbon Coated Plastic Ball (38mmD)

Cat. No. 42EP **\$88.00**

### Hamilton Flywheel

The Hamilton Flywheel is used to demonstrate the positive and negative polarities by connecting both the flywheel and PVC plate to the Electrostatic High-Voltage Genecon. When voltage is applied, the flywheel turns.



#### Kit contents:

- Base : Aluminum Die-casting
- Wheel : Brass with Ni Plating
- Accessory : PVC plate (150x150x1mm)x1

Cat. No. 42HF **\$90.70**

### Moor's Motor Assembly Kit

This DIY Kit is for making Moor's Motor. Use this product along with the Electrostatic High-Voltage Genecon for a great demonstration of electrostatic electricity! This kit will permit the user to experiment using a conductive ball inside a tray laced with aluminium tape. As power is supplied to the electrodes, the ball goes around the tray until power stops.



- Plastic Tray 1 pc
- Aluminum foil
- Aluminum tape
- Carbon coated ball : 1 pc
- Cable (250mm) : Red & Black 1 each

Cat. No. 42MMK \$35.00

### Static Electricity Motor Assembly Kit

Use this product along with the Electrostatic High-Voltage Genecon for a great demonstration of electrostatic electricity! Connect the output cables to the electrode terminals on the static motor. By slowly turning the handle, the cup turns as the electrode tape on the cup and the electrode poles contact each other and then break away. Kit contents:



- Plastic Cup : 1pc
- Aluminium tape
- Base : Plastic for motor 1pc
- Aluminum foil : 1pc
- Small Clip : 2 pcs
- Pin : 1 pc

Cat. No. 42SSMK \$62.50

### Large Neon Tube

A large affordable neon tube of length 300mm which, when connected to the Electrostatic High Voltage Genecon will be lit continuously and bright.

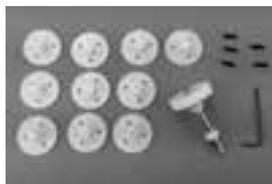


Cat. No. 42NT \$66.30

### Replacement Electrostatic Genecon Gear Set

See Narika website for detailed procedure.

Cat. No. 42EGGS \$30.00



### GYROSCOPE

#### Large Wheel & Handles With cord and grips

When this large wheel is used together with a rotating platform they provide a dramatic demonstration of principles of gyroscopic motion at relatively low rotational velocities. Two form-fitted handgrips are provided to hold the wheel which rotates on a ball-bearing axle. To prevent accidental contact when wheel is being held a protective metal shield is attached to both sides of the wheel. The supplied cord is used to provide spin to the wheel from stationary.



Cat. No. 45G189 \$272.00

### GYROSCOPE

#### Rotating Platform To Stand On

This rotating platform, when used with our Gyroscope, will provide students with an experience in rotational mechanics. Using this platform together with the Gyroscope wheel above, you can make impressive demonstrations of gyroscope precession, conservation of angular momentum and centrifugal force.



Cat. No. 45G1891 \$62.00

### HYDROELECTRIC APPARATUS



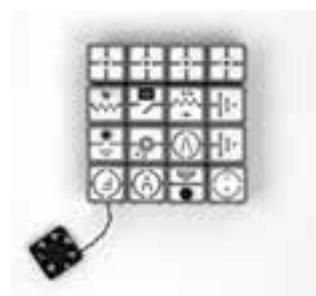
This apparatus can be used by teachers and students to demonstrate hydro electric power, energy conversion & a renewable energy source. A switch is provided to direct the electricity generated to power either

a motor-driven Newton's colour wheel or to light a small lamp.

Cat. No. 42HEA \$198.00

### IQUBE KITS, for learning Electricity

The IQube Electricity Kits address the challenge of cultivating and sustaining a student's interest in Science with hands-on kits that make learning more fun and engaging. IQube accelerates electricity learning through 3 principle concepts:



**Quick Visualization** – See the actual component and its corresponding symbol.

**Smart Connectivity** – Modular blocks that intelligently interact with each other.

**Software Integration** – Measure, control, and analyze the projects in real time.

By incorporating circuit symbols into a block design, students can **quickly start** building circuits based on drawings or on their imagination; this affords a quicker way to visualize and relate to the theories. Students can turn switches on or off, or play with the various sensors.

Real electrical components are used to help students understand the scientific concepts involved in real projects.

**Smart connectivity** lets students mix and match components easily, allowing them to experiment and be curious. Easy-snap magnetic connectors facilitate firm attachment and minimal resistance when interchanging blocks. AND,....the blocks are intelligent, allowing them to interact when data is passed on from one modular unit to another.

**Software integration** enhances the learning experience by allowing the network of blocks to communicate with the student. With the use of a PC, students can see current measurements and apply control values for voltage levels amongst other things. The software provides feedback and real-time input to get them interested and motivated. There are three levels of IQube kits available:

### IQube Senior Bundle (20 cubes)

#### FREE Extended warranty

Recommended for 13 to 16 years old

Programme: 11 sessions; 2 hr per session; 5-6 projects per session including lecture; Plus additional sessions for customized exercises and competitions

- Tactiles Standard Software loaded with 60 projects plus 15+ project upgrades
- Tactiles software / features upgrade for FREE (1 year)
- Extra Free Form exercises
- Teacher's Manual (PDF)
- Expert's support
- Teacher's workshop
- USB Connector
- 1x Power Source
- 1x Light Bulb
- 1x Buzzer
- 1x Switch
- 1x Fan
- 3x Earth
- 1x Light Sensor
- 1x Terminal
- 1x Push Button
- 4x Connectors
- 1x Resistor
- 1x Voltmeter
- 1x Ammeter
- 2x Capacitor

Cat. No. 42IQS **\$830.00**

Follow IQubes NZ journey on Facebook:

<https://www.facebook.com/pages/LEADS-Industries/1615410768702145>

### INDUCTION COIL

Heavy duty unit with spark of up to 80mm. Operates on 12V DC. Produces a very high voltage and spark of a distinct polarity from a low power source (6 to 12V DC). Ideal for powering Spectrum tubes, Crook's tubes, Discharge Tubes, etc.



Cat. No. 42IC **\$620.00**

### IRON BAR

150 x 10mm for use with simple experiments in magnetism. Flat ends and nickel plated finish.

Cat. No. 42IB150 **\$3.20**

### KALEIDOSCOPE

A colourful Kaleidoscope to demonstrate the reflection of light.

Cat. No. 43KAL **\$17.10**

### LAMPS, MES

Box of 10

12V / 0.5A

6V / 0.3A

4.5V / 0.3A

3.8V / 0.2A

2.5V / 0.3A

1.2V / 0.3A

2.2V / 0.25A

1.5V / 0.3A

Cat. No. 42MES12 **\$6.40**

Cat. No. 42MES6 **\$5.50**

Cat. No. 42MES45 **\$5.50**

Cat. No. 25MES38 **\$5.50**

Cat. No. 42MES25 **\$5.80**

Cat. No. 42MES1 **\$5.80**

Cat. No. 25MES22 **\$5.50**

Cat. No. 25MES15 **\$5.50**



### LAMPS, SBC (For 42LS and 42LSS Lamp stations)

Double Contact, Horizontal Filament

12V / 24W, Pack /10

Cat. No. 42SBC24 **\$12.00**

12V / 21W, Pack /10 (Automotive)

Cat. No. 04BA150 **\$27.20**



12V /5W, Mini base, Pack /10

Cat. No. 42SBC5 **\$9.50**

### LAMP HOLDERS



SBC – Double contact spring-loaded SBC lamp batten. Two mounting holes on base.

Cat. No. 25BHBC **\$7.70**



MES – Single contact MES lamp batten. Two mounting holes on base.

Cat. No. 25BHMES **\$1.70**

### LAMP STATION, MES



MES Lamp batten fitted onto a solid base approx. 55 x 80mm with two 4mm banana sockets.

Cat. No. 42LSM-S **\$4.50**

### LAMP STAND, SBC



Top quality stand to show visual variation in currents. 12V x 5Watt Globe bayonet, mounted on base with 2 x 4mm banana socket terminals. Comes with one lamp 12V/5W.

Cat. No. 42LSS

1-9: **\$17.00**

10+ **\$15.45**

Spare lamp for 42LSS: SBC, Mini base, 12V/5W Pk/10

Cat. No. 42SBC5 **\$9.50**

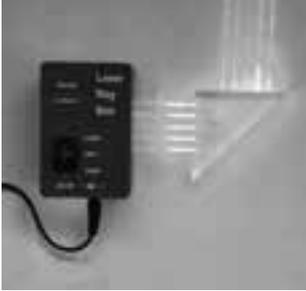
## LASER POINTER

Affordable Laser Pointer, red beam 1mW CLASS A, safe for teaching and according to DET requirement. Can be used for basic optics work. 2 x AAA Batteries to operate. As a precaution, avoid shining the beam into the eyes.



Cat. No. 43LP **\$30.60**

## LASER RAY BOX



The Laser Ray Box emits five or three parallel optical laser beams for demonstrating the bending of light rays. Experiments: Light bending by reflection, Focusing effect, Reflection with mirrors, Fresnel reflection, Monochromatic character of laser light, Total Internal reflection. Battery operated. The Laser Ray Box consists of five 0.75 mW, 635 nm semiconductor diode lasers, each emitting a highly visible light beam. Beams are parallel and 1.6 cm apart and can be seen in most well-lighted rooms. Energy is provided by a USB rechargeable NiCd battery. The bottom of the housing includes a magnetized surface for providing adhesion to both horizontal and vertical surfaces such as steel white boards for classroom optical demonstrations.



Prisms /lens/mirrors available in most science labs can be used with the Laser Ray Box either on a Steel white board or on the bench top. Cat. No. 43LBUHK is a useful accessory.

Cat. No. 43LRB **\$90.00**



Light Box (Hodson) Upper Half Kit, Prisms, Mirrors In Foam Base.

Cat. No. 43LBUHK **\$78.50**

## LED RAY BOX

For Refraction & Reflection of Light Experiments



This unique LED Ray Box Set from Narika provides clear light paths for Refraction & Reflection Experiments. Utilising the optical path slit, the high luminosity white LED can produce coloured rays in white, red and blue using the

built-in coloured filters. Tyndall effect smoked lenses are included. As the LED Ray Box is battery-operated, it is portable and well-suited for group experiments. The LED light source does not get hot and has long life. It is possible to change the number of optical paths (1 to 3) and colour combinations (red, white, and green) with the slide knob on the front of the unit.

Kit Contents: x1 LED Ray Box, x1 Mirror ( 80 x 65 x 22mm), x1 Semicircle Smoke Lens 120 x 60diam. mm), x1 Smoke Convex Lens (f=50mm), x1 Trapezoid Smoke Lens (70 x 40 x 20mm, acute angle 60deg.), x1 Circular Protractor.

Cat. No. 43LEDRB **\$280.00**

## LENSES, 50mm dia.

### Biconcave

5cmF/L	Cat. No. 48LBV5	<b>\$3.00</b>
10cmF/L	Cat. No. 48LBV10	<b>\$3.00</b>
15cmF/L	Cat. No. 48LBV15	<b>\$3.00</b>
20cmF/L	Cat. No. 48LBV20	<b>\$3.00</b>
25cmF/L	Cat. No. 48LBV25	<b>\$3.00</b>
30cmF/L	Cat. No. 48LBV30	<b>\$3.00</b>
50cm F/L	Cat. No. 48LBV50	<b>\$3.00</b>
100cmF/L	Cat. No. 48LBV100	<b>\$3.00</b>

### Biconvex

5cmF/L	Cat. No. 48LBX5	<b>\$3.00</b>
10cmF/L	Cat. No. 48LBX10	<b>\$3.00</b>
15cmF/L	Cat. No. 48LBX15	<b>\$3.00</b>
20cmF/L	Cat. No. 48LBX20	<b>\$3.00</b>
25cmF/L	Cat. No. 48LBX25	<b>\$3.00</b>
30cmF/L	Cat. No. 48LBX30	<b>\$3.00</b>
50cmF/L	Cat. No. 48LBX50	<b>\$3.00</b>
100cmF/L	Cat. No. 48LBX100	<b>\$3.00</b>



## LENS & MIRROR HOLDER

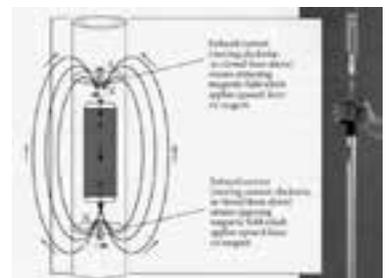
V-Groove Holds 50mm diameter lenses and mirrors.

Cat. No. 48LMH119 **\$6.00**

## LENZ'S LAW DEMONSTRATOR

Demonstrates and measures magnetic induction. Drop 2 identical looking masses separately down the 1.5metre tube (one is a disguised magnet). One takes over 10 times longer to fall.

Why? What happens to the weight of the tube? Attach a spring balance, observe and find out. Supplied with 1 aluminium tube, tube hangar, 2 identical masses (one is a neodymium magnet) & instructions. Spring balance not included. NB: Length of this apparatus allows for weighing and is more effective.



Cat. No. 42LLD **\$125.00**

## LEVER & PENDULUM APPARATUS

This apparatus allows students to experiment with both applications as it includes a lever unit, a pendulum unit, weights and a steel stand. The lever unit has numbered holes on it to hook weights, while the pendulum unit has a semi-circular protractor for measuring the angle of pendulum swing. An adjusting knob allows adjustment of the length of the pendulum thread. The has a convenient collapsible storage function especially for schools (Lever unit can be fixed vertically on the stand & pendulum has a tidy reel for the thread). Includes instructions for two experiments.



Experiments include

- lever unit: "Motion of Force" such as the correlation between fulcrum point and point of effort/load or moment of force.
- pendulum unit: "Pendulum motion" such as correlation between the length of thread with weight and the cycle, as well as, energy conversion of potential/kinetic energy.

Cat. No.45LPA **\$296.00**

## LEYDEN JAR, DISSECTABLE.

Charge it, dissect it, holds the charge for hours. Prove that a charge is stored in the dielectric insulator not on the metal surfaces. Includes: 2 Aluminium cans, polystyrene dielectric & electrode with ball terminal. After charging the conductors, the electrode is removed and the charge measured. Dimensions: Inner can 62Hx80D mm, Outer Can 80H x 98D mm, Plastic 105H x 90D mm.



Cat. No. 42LJD **\$27.50**

## LIGHT BENDER

The Light Bender Kit consists of two Optical Bars to demonstrate total internal reflection of light. Use Cat. 43LP Laser Pointer as light source.



Cat. No. 43LB **\$32.00**

## (Hodson) Light Box and Optical Set, I.E.C.

The 'Hodson' Light Box and Optical Set is a unique light box with adjustable collimating lens and integral hinged mirrors. Light passes from either the front through slit forming plates for experiments in rays, prisms and lenses, or from three apertures at the rear for colour blending experiments. The light box is carefully designed to be robust in the hands of students and experimental results are excellent.



The whole kit of high quality acrylic lenses, prisms and slabs stores in a 2 part styrene foam pack which keeps the instrument and components clean and protected whilst assisting to identify parts. The standard model operates from 12V AC/DC power source at 3amps\*. Other models and various kit combinations are available for special requirements. Power supply not included. (See power supplies.)

### The full kit contains:

#### Upper Pack

- 45 x 45 x 90 prism
- 60 x 30 x 90 prism
- 60 x 60 x 60 prism
- Half round slab lens
- Rectangular slab
- Plane mirror
- Half round mirror
- Parabolic mirror
- Lens, Bi-convex 3.75mm f/l
- Lens, Bi-convex 7.5mm f/l
- Lens, Bi-concave 7.5mm f/l

#### Lower Pack

- Light Box and mirrors
- Pair of slit forming plates
- Spare lamp 12V/20W
- Set of 8 colour filters
- Set of 8 colour plates
- Experiment manual
- Storage pack

Light Box & Optical Set - Hodson 12V x 20W std

Cat. No. 43LB260 **\$155.00**

#### Spares:

Light Box Filters, new, colour, 50mm, set of 8 (See Website for individual colors)

Cat. No. 47LBF2 **\$17.80**

Light Box Filter Blue 50mm (Primary), each

Cat. No. 47LBFB **\$2.80**

Light Box Filter Cyan 50mm

Cat. No. 47LBFC **\$2.80**

Light Box Filter Green 50mm (Primary), each

Cat. No. 47LBFG **\$2.80**

Light Box Filter Magenta 50mm, each

Cat. No. 47LBFM **\$2.80**

Light Box Filter Orange 50mm, each

Cat. No. 47LBFO **\$2.80**

Light Box Filter Red 50mm (Primary), each

Cat. No. 47LBFR **\$2.80**

Light Box Filter Violet 50mm, each

Cat. No. 47LBFR **\$2.80**

Light Box Filter Yellow 50mm, each

Cat. No. 47LBFY **\$2.80**

Light Box lens, biconcave, acrylic - 7.5cm f/l

Cat. No. 47LBV **\$8.60**

Light Box lens, biconvex, acrylic - 7.5cm f/l

Cat. No. 47LBX7 **\$8.40**

Light Box lens, biconvex, acrylic - 3.75cm f/l

Cat. No. 47LBX3 **\$10.20**

Light Box Only, w/collimating lens & slit formers

Cat. No. 43LBO **\$73.00**

Light Box Prism, acrylic - 45 x 45 x90 deg	<b>Cat. No. 47LBP44</b>	<b>\$11.20</b>
Light Box Prism, acrylic - 60 x 60 x60 deg	<b>Cat. No. 47LBP66</b>	<b>\$12.20</b>
Light Box Prism, acrylic - 60 x 30 x 90 deg	<b>Cat. No. 47LBP63</b>	<b>\$11.80</b>
Light Box Prism, half rnd. block acrylic - 75mm d.	<b>Cat. No. 47LBPH</b>	<b>\$16.00</b>
Light Box Prism, rect. block acrylic - 75 x 50mm	<b>Cat. No. 47LBPR</b>	<b>\$16.00</b>
Light Box Adjust. knob & screw for coll. lens	<b>Cat. No. 47LBKS</b>	<b>\$4.00</b>
Light Box Colour Plates - set of 8	<b>Cat. No. 47LBCP</b>	<b>\$17.50</b>
Light Box Hinged Mirror	<b>Cat. No. 47LBHM</b>	<b>\$5.75</b>
Light Box Lamp Socket, Lead & Plugs, Halogen upgrade, (Purchase lamp separately Cat. No. 47LBL2)	<b>Cat. No. 47LBLS</b>	<b>\$16.20</b>
Light Box Spare Lamp, Halogen (new quartz iodide)	<b>Cat. No. 47LBL2</b>	<b>\$3.40</b>
Light Box Mirror, half round	<b>Cat. No. 47LBMH</b>	<b>\$5.80</b>
Light Box Mirror, parabolic	<b>Cat. No. 47LBMP</b>	<b>\$5.80</b>
Light Box Mirror, plane glass - mounted on foot	<b>Cat. No. 47LBMPG</b>	<b>\$6.40</b>
Light Box Slit Formers - three	<b>Cat. No. 47LBSF</b>	<b>\$5.90</b>
Light Box Spare Lamp (old type SBC socket)	<b>Cat. No. 47LBL</b>	<b>\$2.65</b>
Styrene Foam Storage Pack	<b>Cat. No. 43LBH</b>	<b>\$15.40</b>

## LIGHT BOX ONLY



The Light Box can be purchased separately to the "full kit", allowing the user to run several experiments from the full kit components. All light boxes require a 12 volt Power Supply (see page 77-78)

**Cat. No. 43LB0** **\$73.00**

## LIGHT BOX HALOGEN UPGRADE KIT



Consists of a lamp-holder with banana plugs for 12V/20W quartz-iodide lamp and spacing adapter to convert old light boxes (pre-2000) with SBC vertical filament lamps to the more efficient halogen lamp.

**Cat. No. 47LBLS** **\$16.20**

## LIGHT BOX POWER SUPPLY, AC

This very compact IEC Power source is a simple transformer with outputs of 6V AC and 12V AC with a total load of 4 amps and is supplied complete with a power cable for connecting to mains. It is particularly suitable for the 'Hodson' Light Box because it can fit the reserved compartment inside the styrene foam housing. It is suitable for lamps of all types including the IEC low voltage Microscope Lamps. Each output is fitted with a self-resetting overload that trips above 4 amps and resets when the overload is removed.



**Cat. No. 44PST** **\$124.00**

## LIGHT BOX & OPTICAL SET, 'BASICS'

Similar to the Hodson Light Box with the following exceptions:

- Set of 8 colour CARDS rather than plastic plates
- Set of 8 colour FILMS frame-mounted rather than plastic filters
- Cardboard / Foam storage box



**Cat. No. 43LBE** **\$110.00**

### Spares for 'Basics' Light Box

(not interchangeable with spares for Hodson Light Box)

Prisms For 43LBE Set/5 **Cat. No. 43LBEB** **\$32.00**

Coloured Card with Lamp for 48LBE Set  
**Cat. No. 43LBEC** **\$8.00**

Colour Filters for 43LBE Set/8  
**Cat. No. 43LBEF** **\$8.00**

Lamp Halogen 12V/20W for 43LBE  
**Cat. No. 43LBEH** **\$6.95**

Cylindrical Acrylic Lenses Set/3  
**Cat. No. 43LBEL** **\$16.70**

Light Box Mirrors for 43LBE Set/3  
**Cat. No. 43LBEM** **\$20.40**

Light Box Slits for 43LBE Set/2  
**Cat. No. 43LBES** **\$6.00**

## LIGHT GATE

See BeeSpi V Page 87

## LOCKTRONICS KITS

### Locktronics Kit - Fundamentals of Electricity

This kit provides an introduction to the fundamentals of electricity. It is ideal for those who are completely new to the subject, and is suitable for use from ages 8+. The kit is supplied with 30 pages of notes and worksheets. (In the UK suitable for KS1 and KS2 Science units 2F, 4F, 6G).

Learning objectives / experiments

- What is electricity?
- Simple electrical components
- The simplest circuit

- Conductors and insulators
- Switches
- Two way switches
- Series circuits
- Parallel circuits
- Buzzers
- Motors



Cat. No. 42MXFE **\$305.00**

## Locktronics Kit - Electricity, Magnetism and Materials

This kit provides a comprehensive range of practical assignments in electricity and magnetism and is ideal for those who are studying science and electricity within a wide variety of academic or vocational courses. The kit is supplied with a comprehensive set of worksheets that cover the electrical properties of materials, and introduce students to electricity. Suitable for pupils from age 11 upwards. (In the UK suitable for KS3 and KS4).

Learning objectives / experiments

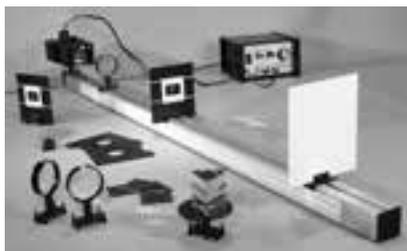
- Electrical properties of materials
- Simple circuits
- Heat and magnetism
- Basic circuit symbols
- Current flow
- Series and parallel circuits
- Patterns of voltage and current
- Electrical sensors
- Relays and electromagnets



Cat. No. 42MXEM **\$602.40**

## (Hodson) OPTICAL BENCH & KIT

The Optical Bench system is used with the standard 'Hodson' Light Box and Optical Set. The 'Hodson' Light Box itself is the light source. The lenses and slabs in the optical set



are used on the prism table. The study of colours and shadows is performed from the hinged mirror end of the light box and the study of light rays is performed from the ray end of the light box with the various slit formers fitted.

The Optical bench and Kit comes complete with all accessories. Kit Contents:

- One 1200mm long straight anodised aluminium bench with scale.
- Special mounting platform and pillar to support 'Hodson' Light box.
- Set of 8 glass convex lenses 50mm dia.
- Set of 4 glass concave lenses 50mm dia.

- Photographic slide: 3, 5 and 8mm dia. orifices.
- Photographic slide: circular target.
- Photographic slide: metric scale.
- Photographic slide: letter 'F'
- Projection screen
- 3 x Plastic lens holders
- 1 x Rotary prism table
- Instructions
- Note: power supply is not included.

Without Light Box

Cat. No. 430BK **\$198.00**

With Light Box

Cat. No. 430BKL **\$274.00**

## MAGDEBURG HEMISPHERE



For demonstrating a vacuum and the force of air pressure. Approx. 75mm diameter with stopcock and handles. Nickel-plated brass.

Cat. No. 45MHB **\$62.50**

## MAGNETS

### Electromagnet, STRONG!

This amazing electromagnet is like an electric version of the Magdeburg Hemisphere above but the resistance to pulling it apart is from the magnetic field generated by 1.5V batteries! Complete with a large easy to hold handle and safety catch to stop excessive backward body motion, students can discover that up to 60 kg of force from a few batteries is a powerful thing. Batteries included, maximum load 60 kg, 270 x 80 mm, 1.4 kg.



Cat. No. 42EMS **\$430.00**

### Alnico (Pair)

75 x 15 x 10mm with keepers, poles marked N & S.

Cat. No. 42MBC **\$23.10**

75 x 12 x 8mm, poles marked red & blue, N&S, without keepers.

Cat. No. 42MBA **\$18.80**



42MBA 42MBC

### Alnico, Horseshoe

Very Strong, 26.5 x 29 x 8.5mm, 22% Cobalt.

Cat. No. 42MHSA **\$9.00**



### Horseshoe Magnet Large

U-shaped magnet U-1AN, type: AlNi, size: 50(inner distance) x 105mm, coated finish, Blue & Red, Poles marked N & S, with Keeper. Strength: 35mT.



Cat. No. 42HML \$40.00

### Alnico Mighty Magnet

This AlNiCo U-shaped Mighty Magnet UM has a plated finish and comes with wooden box and keeper. 50 x 90mm(inner x outer), Strength: 70mT.



Cat. No. 42HMS \$222.00



### Ferrite Magnet Bar

Approximately 50 x 14 x 9 mm

Cat. No. 42MC506 \$2.00



### Magnet Wand

Ferrite magnet encapsulated in plastic

Cat. No. 42MW \$5.90

10+ \$5.50

### Neodymium (Rare earth)

Strong magnetic field 50 x 30 x 10mm. Take care with this magnet as it is VERY strong.

Cat. No. 42MN5030 \$60.00

### MAGNETIC COMPASSES



35mm, one see-through face

Cat. No. 42CS35 \$4.40

10+ \$4.00

19mm, plotting, basic, 2 see-through faces



Cat. No. 42CP19 \$1.80

10+ \$1.60

### Compass Set in Storage Tray

Deluxe class set of 20 high quality 40mm diameter compasses in a handy storage tray with a calibration strip which re-magnetises compasses into the correct orientation. In the tray, all compasses can be checked at a glance for correct North orientation. Each compass has a red triangle on the bottom face to assist students aligning it to North.



Set/20 compasses in Tray Cat. No. 42CSST \$210.00



### Spare Compasses

for 42CSST, Set/10, 40mm diameter, with red triangle.

Cat. No. 42CS \$55.00



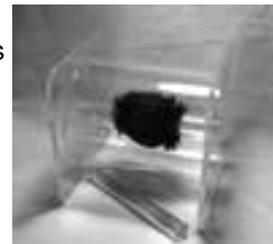
### Basic Compasses

Set/10, 40mm diameter, with red triangle.

Cat. No. 42CSB \$34.00

### MAGNETIC FIELD 3D MODEL

Filings in AIR mode. Unlike models that use compass needles to indicate the lines of force, the contained fine iron filings in this model demonstrate a true 3D shape of the field around a cylindrical magnet. Comes complete with magnet and a rod to retrieve the magnet. Made of Perspex, approximate dimensions 110 x 115 x 115mm (LxHxW).



Cat. No. 42MFCM \$28.80

### Iron Filings in SILICON OIL Model

Observation of three-dimensional magnetic field lines are stunningly brought to life in slow motion in this quality model as they slowly form around the alnico magnet in the center of the Silicon oil sealed chamber. The magnetic lines of force appear clean and well defined. This is the finest 3D magnetic field model we have ever seen! Dimensions 65 x 65 x 105 mm, approx. 360g, Alnico magnet (9 x 35 mm) 1 piece.



Cat. No. 42MFMS \$114.00

### MAGNETOIDS

#### MAGNETS FROM MARS!!!

Two super-strong, special oblong magnets that are amazing. Made from Haematite, they are smooth and safe to handle. Spin them on a smooth surface and as they attract each other, listen to them chirp!!



A new, fun way to demonstrate magnetic force and other principles. Why do they chirp? Where is North and South? What happens as they collide? How can two little magnets be so ridiculously entertaining? Play with magnetoids for just few minutes and find out. Before you know it you will be entranced by their spinning, chirping, wobbling ways. Upon releasing the Magnetoids they immediately perform a magic, magnetic ballet of attraction and repulsion, clashing, spinning and making an amazing ear-catching, insectoid, chirping sound in the process (...called a 'glissando',....meaning rapid sliding up or down the musical scale.) Each size 17 x 59mm.

Cat. No. 42MTD \$14.30

4+ \$12.50

## MAGNET ACTIVITY KIT

Complete with fully illustrated booklet.

Learn about: History of Magnets, Use, Materials attracted, Poles, Activity & Behaviour, Word-find, Strength & Distance, Attraction vs Repulsion, Magnetic fields, Transference and Temporary magnets.



Cat. No. 42MAK \$12.00

## MAGNET ACCESSORIES

### IRON FILINGS

Easy as 1,2,3....

1. Centre any magnet under a sheet of paper.
2. Sprinkle iron filings onto paper and observe lines and force.
3. Experiment with different magnets.

Coarse and Fine in 80g sprinkler pack

Cat. No. 48IFSP \$10.00

Iron Filings, Coarse, 250g

Cat. No. 48IFC \$12.00

also see Iron Filings in Chemicals Section of this catalogue.

### MAGUCHIPS

Maguchips provide a more tidy alternative to iron filings in making magnetic field observations by generating finely curved lines. The chips are made of 0.3 mm diameter zinc wire plated with iron and are about 2mm length. Class set of 300g total (x6 vials of 50g each)



Cat. No. 42MGC \$132.00

### MAGNETIC LINE COLOUR CHIPS

Multi-coloured plastic-coated iron chips are not only easy to handle and clean up, but also heaps of fun! This alternative to iron filings puts some colour and excitement into the exploration of 3-dimensional magnetic fields. By connecting magnets in a variety of shapes, students can see dynamic changes within the magnetic field lines. Place a strong magnet under a sheet of white cardboard and sprinkle these on for an amazing effect. You will likely want several packs of these!



Cat. No. 42MLC \$35.00

## DUAL PURPOSE TRAY

This Thermometer / Magnet Dual Purpose Storage Tray helps you to keep costs down! Made from washable ABS plastic this durable tray is designed for versatility. Holds 10 x 305mm Thermometers or x 10 pairs of 50/75 mm length x 15 x 10mm Bar Magnets with keepers.



Cat. No. 48DPT \$22.00

## RE-MAGNETISER



Restore tired old magnets to their former glory! May be mounted on bench or wall.

Cat. No. 42RMA \$78.00

## MANOMETER DEMONSTRATION



The IEC Manometer is a high quality instrument designed to demonstrate the fundamentals of any manometer. The unit comes complete with a wall hanging ring and a mouth blow tube for pressurizing one leg of the U-Tube. The user fills the U-Tube with coloured water (food dye works well) so that the water level is more easily seen. Size ~300mm.

Cat. No. 45MD \$118.00

## MEMORY WIRE, NITINOL



This wire is made of Nitinol, a nickel-titanium alloy (a combination of two or more metals which exhibits different properties from those of the parent metals) with a remarkable shape memory.

Bend the wire into almost any shape while it is cold; it will remain bent until heated (in hot water), and then resume its original shape.

Cat. No. 43MW \$20.00

## MEMORY FABRIC



This origami crane roosts home to its original shape when gently bounced around in your hands. Made of pleated 100% polyester 200 x 200mm (flat).

Cat. No. 43MF \$32.00

# METERS

## BENCH TYPE VOLTMETERS

- 0-15 volt DC **Cat. No. 44VD15 \$34.00**
- 0-20 volt DC **Cat. No. 44VDA20 \$34.00**
- 0-2, 0-20 volt DC **Cat. No. 44VDD20 \$39.60**
- 0-5, 0-15 volt DC (Dual Range) **Cat. No. 44VDD15 \$34.00**
- 3-15-30 volt DC (3 range) **Cat. No. 44VDT30 \$34.00**
- Digital Voltmeter, 0-20V DC **Cat. No. 44VD20 \$54.00**



44VDA20



44VD20

## AMMETERS



44ADD



44ADG

- 0-5 amp AC **Cat. No. 44AA \$34.00**
- 0-5 amp DC **Cat. No. 44AD \$31.50**
- Centre Zero,  $\mu$ A, 100-0-100, DC **Cat. No. 44AD100 \$44.40**
- Dual Range 0-1/10A DC **Cat. No. 44ADD \$40.00**
- Dual Range 0-1/5A DC **Cat. No. 44ADD5 \$34.00**
- Ammeter, Digital, 0-10A DC **Cat. No. 44ADG \$54.00**

## ELECTRIC ENERGY METER

This new Electric Energy Meter has a combined voltmeter and ammeter which allows measurement and display of the electric power passing through it per hour. Suitable experiments are comparison of energy consumption of lamps connected to hand-held DC generators, or, comparison between (theoretical) potential energy and actual consumed power by a hand-held DC generator at the Input terminal and a hand-held DC generator with pulley (Narika Genecon DUW with Pulley – Cat. 42GDP) at the Output terminal, etc. The meter has a simple interface and the added capability to log readings. When connected to a PC via USB, the logged measurements can be downloaded using the software included with the meter.

### Specifications

Power Supply	Voltage	5V DC	Micro USB connector comes with the product.
	Consumption Current	100 mA	
Maximum Input	Maximum Current	$\pm 7$ A	*Be careful with Max I/P current.
	Maximum Voltage	$\pm 25$ V	*Be careful with Max I/P voltage.
Measurement Range	Current [A]	-7-0-7A	Minimum display 100 $\mu$ A
	Voltage [V]	-25-0-25V	Minimum display 1mV
	Power [W]	0-175W	Minimum display 100nW
	Time [sec]	0-9,999sec	Minimum display 1sec
	Energy [J]	1.75MJ	Minimum display 100nJ
Measurement Accuracy	Voltage: $\pm 1\%$ , Current: $\pm 1\%$		
Modes	[4 Modes]		
	Measuring Accumulated Electrical Energy Mode (J, sec)		
	Measuring Power Mode (W)		
	Measuring Average Power (W, J, sec)		
Others	Measuring Current, Voltage and Power Mode (A, V, W)		
Others	Data Logging Function		
Accessory	CD-ROM for the Data Logging Software		

**NEW**  
Product



**Cat. No. 42EEM \$550.00**

PHYSICS

## 'CRABEE' METERS

Looking more as if it should scuttle along the beach, Narika's 'Crabee' DC meters with Alligator Clip leads introduce a new concept in space-saving integrated compact digital meters. No hassle auto mode for switching range in each experiment makes measurements a breeze. Just connect to the location you want to measure for instantaneous results.

### Crabee Ammeter

- Measuring range:  $\pm 500$  mA, 3.0 A (auto switching)
- Body size: 53 x 21 x 15 mm, cable length: approx. 60mm
- Power supply: x1 cr1220 battery



**Cat. No. 42CRA \$68.00**

### Crabee Voltmeter

- Measuring range:  $\pm 25.0$  V (+ 5.00 V with range switch on/off)
- Body size: 53 x 21 x 15 mm, cable length: approx. 60 mm
- Power supply: x1 cr1220 battery



**Cat. No. 42CRV \$68.00**

## GALVANOMETER

- +35-0-35- mv DC **Cat. No. 44G \$34.00**
- Wide selection of meters is available, if not listed please enquire.

## METER, DEMONSTRATION

A versatile instrument that can be converted into an AC or DC voltmeter or ammeter with a selection of plug-in dials to give different voltage and current ranges. High quality moving coil, spring-controlled movement with full scale deflection of 5mA or 100mV DC. Interchangeable dials with their own couplers connect appropriate resistors, shunts or rectifiers to convert the instrument to the range as displayed on the scale for any particular dial. Scales are marked on both sides. Zero adjuster allows for



centre zero dials. Supplied with the following dials:  
DC current: 10-0-10mA, 0-500mA, 0-5A, 0-10A, 50-0-50mA, 0-1A

AC current: 0-500mA, 0-1A, 0-5A, 0-10A

DC voltage: 0-5V, 0-15V

AC voltage: 0-5V, 0-15V

(other dials available upon request)

**Cat. No. 42MDS \$322.00**

Calibration Dial for Demo. Meter, 100mv

**Cat. No. 42MDSCD \$16.00**



## METER, LIGHT

Basic, analogue.

**Cat. No. 43ML \$35.00**

## METER, LIGHT

Digital. The ideal easy-to-use classroom digital light meter with 3 ranges to 50,000 Lux.

Specifications:

Display: 3.5 digit LCD

Measuring Range

0-2000Lux, 2000-19990Lux, 20000-50000Lux

3 Ranges : x1,x10,x100

Accuracy: +/- 5%

Photo detector: One silicon photo diode with filter.

Data Hold

Power Supply: 9V

Dimensions: 125.5x72x27mm

Photo detector dimension: 83x52x20.5mm

Weight: 180g

**Cat. No. 43LMD50 \$95.00**



## MULTIMETER, 34-RANGE with Capacitance

A well-priced meter with everything you need - capacitance, temperature and 10A on AC and DC, compact and light weight with a rugged moulded case for longterm classroom use.



FEATURES:

- Data hold
- Relative measurement
- Case included

SPECIFICATIONS:

Category: Cat III 600V

Display: 4000 count

Basic DVC accuracy: 0.5%

DC voltage: 400mV,4V,40V,400V,600V (+/- 0.5%)

AC voltage: 400mV,4V,40V,400V,600V (+/- 1.2%)

DC current: 4mA,40mA,400mA,10mA ( +/- 2.5%)

AC current: 4mA,40mA,400mA,10A (+/- 3%)

Resistance: 400R,4K,40K,400K,40M (+/- 0.8%)

Temperature: -20 C to + 760 C (+/- 3%)

Capacitance: 40nF,4uF,40uF,100uF (+/- 3%)

Frequency: 4kHz,40kHz,400kHz,4000kHz,10MHz (+/- 1.5%)

Ave/RMS: Ave

Dimensions: 138(H) x 68(W) x 37(D)mm

**Cat. No. 44MM34 \$77.20**

## 1000V MULTI TESTER PROFESSIONAL

Model M820B

- 6 functions
- 19 ranges
- Rugged protective case with holster for probes storage
- Foldout stand
- Low Battery Indicator
- overload protection to 1000V Max.

• Battery included

Ranges:

DCV: 0.2, 2, 20, 200, 600V

ACV: 200, 600V

DCA: 200 A, 2mA, 20mA, 200mA, 10A

Resistance: 200, 2K, 20K, 200K, 2M ohms

Transistor hFE Test: NPN & PNP

Temperature (K Type Probe): -20°C to 1370°C

**Cat. No. 44MMP \$23.00**

**10+ \$20.60**



## MICROWAVE APPARATUS

**12 Volt operation, Full Kit - 2.8cm (Ancillary equipment NOT required for operation )**

This IEC designed Microwave Apparatus is a very compact, portable and easy to use instrument. The transmitter (Tx) may be operated from Low Voltage, AC or DC 12 Volt, or from 12 Volt battery.



In addition, the kit contains a Mains Adaptor to enable the Tx to be operated from mains power. The transmitter has provision to transmit in several modes. This makes additional equipment unnecessary and makes the instrument easier for the student to use. The power output is safe at approximately 10mW, but with the assistance of the amplified receiver, this power is ample for both classroom and field experiments. The Receiver (Rx) has internal 9V battery with battery test facility. When its battery is exhausted, Rx may be operated from Low Voltage AC or DC or Mains Adaptor - as with Tx, battery may be replaced when convenient. The receiver has 4 levels of reception 'gain' to ensure that meter readings are suitable for all types of experiments from all distances. For total portability, the Rx has inbuilt audio amplifier, speaker and signal strength meter. The full operating receiver may be carried around the room with no wires attached.

### kit Contents:

- Transmitter.
- Receiver with inbuilt Audio Amplifier and Signal Strength meter.
- Diode Probe.
- Wax Lens.
- Hollow Plastic Prism.
- Set of 3 Metal Reflector Plates.
- Diffraction Grating.
- Polarizing Grille.
- Microphone.
- Partial Reflector.
- Mains adaptor.
- An experiment and instruction manual.

**Cat. No. 46MWA \$1,200.00**

## MIRAGE

**Creates Baffling Illusions That Defy Explanation**



### A Precision Optical Instrument

Scientists call them "three-dimensional real images." Students will call them IMPOSSIBLE! Just place any small object into MIRAGE. Instantly, incredibly, they appear ABOVE it, in full three-dimension. Study these visions from all sides. But reach to touch them... your fingers go right through!

**Cat. No. 43M1 \$82.00**

## MIRRORS, 50mm Diameter

(other sizes also available)

### CONVEX

5cm F/L	<b>Cat. No. 48MCX5</b>	<b>\$3.10</b>
7.5cm F/L	<b>Cat. No. 48MCX7</b>	<b>\$3.10</b>
10cm F/L	<b>Cat. No. 48MCX10</b>	<b>\$3.10</b>
15cm F/L	<b>Cat. No. 48MCX15</b>	<b>\$3.10</b>
20cm F/L	<b>Cat. No. 48MCX20</b>	<b>\$3.10</b>
25cm F/L	<b>Cat. No. 48MCX25</b>	<b>\$3.10</b>
30cm F/L	<b>Cat. No. 48MCX30</b>	<b>\$3.10</b>

### CONCAVE

5cm F/L	<b>Cat. No. 48MCV5</b>	<b>\$3.10</b>
7.5cm F/L	<b>Cat. No. 48MCV7</b>	<b>\$3.10</b>
10cm F/L	<b>Cat. No. 48MCV10</b>	<b>\$3.10</b>
15cm F/L	<b>Cat. No. 48MCV15</b>	<b>\$3.10</b>
20cm F/L	<b>Cat. No. 48MCV20</b>	<b>\$3.10</b>
25cm F/L	<b>Cat. No. 48MCV25</b>	<b>\$3.10</b>
30cm F/L	<b>Cat. No. 48MCV30</b>	<b>\$3.10</b>

Also refer to Hodson Light Box

**MIRROR** - Plain, 60 x 90mm, single-sided, plastic

**Cat. No. 48MPSS \$1.50**

### LENS AND MIRROR HOLDER

Wooden holder for lenses and mirror up to 50mm diameter

**Cat. No. 48LMH19 \$6.00**

### MIRRORS, LARGE (600mm)

Developed with the assistance of physics teachers in both New Zealand and Australia, this set of two Physics Mirrors includes two unbreakable acrylic 600mm mirrors, one convex and one concave and also an experiment book. Experiments include:



1. Basic measurement of light.
2. How to measure spherical aberration.
3. How to measure sound and show that it is directional
4. How to create an illusion.
5. The power of solar energy.

The mirrors allow physics teachers to demonstrate a range of experiments about light refraction and light reflection.

The Set comprises of: 1x 600mm Convex & 1x 600mm Concave Acrylic Mirror with P.V.C edges, adjustable fittings, complete with experiment booklet and display stands.

Mirrors Concave/Convex, 600mm, On Stand, Set/2  
**Cat. No. 48MCVX600 \$475.00**

Mirror Concave 600mm On Stand  
**Cat. No. 48MCV600 \$269.00**

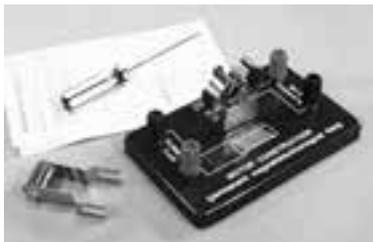
Mirror Convex 600mm On Stand

Cat. No. 48MCX600 \$255.50

### MOTOR - CONSTRUCTION KIT

Simple Type

Assist students to investigate the principles, design and operation of series, shunt wound field coil and permanent magnet D.C. motors. The kit is designed for constant process of dismantling and assembling.



Cat. No. 42MCK \$34.00

### MOTOR DEMONSTRATION



Large demonstration motor approx 200mm high. 4-12V DC, interchangeable from single to double to triple poles. Learn about motors with this highly visual demonstration.

Cat. No. 42MDL \$148.00

### MOTOR, ELECTRIC & GENERATOR

1.5 to 3 volt operation. Small electric motor, mounted on a plastic base and fitted with double groove pulley. When used as a motor, weights may be winched up from the floor and energy into the motor measured. As weights fall to floor, the motor behaves as a generator and output energy may be measured. Can drive small devices. Complete with 4mm spin free socket terminals for connections.



Cat. No. 42EM1760 \$36.00

### HAND CRANK DC GENERATOR

See GENECON Page 71.

### MOTOR KIT, ELECTRIC (HODSON)

This new, unique and low cost product is for the teaching of basic electromagnetics by building simple electric motors. Each motor is self contained and the commutator and brushes are created by the simple bending of wire. The motor has a torque and it can be used to winch a small weight up from the floor. An elastic band holds the assembly together and it can be easily handled or stored as a working unit. The kit contains all the parts to make x 2 motors. These include the rotors, axles, end plates, magnets, iron yokes and both red and black insulated wire. A motor can run on either a single 'D' battery or a DC power supply set at about 2 volts.



Cat. No. 42EMK \$44.00

3+ \$42.50

### WORLD'S SIMPLEST MOTOR

Wrap the wire around a D-cell battery, scrape the ends, and the coil is ready to go in one of the world's easiest motors to build. The blister carded package includes everything (except battery) to have the motor together and working in a very short time. The principles of magnetism can be demonstrated as the coil becomes energized in each rotation and pushes against a mounted ceramic magnet with enough energy to keep it spinning. Additional experiments are suggested for hours of fun and learning.



Cat. No. 42WSM \$10.80

### NEWTON'S CRADLE

Demonstrates Newton's third law of motion and the principle of conservation of momentum.



Cat. No. 48NC \$25.00

### NEWTON'S RING APPARATUS

Pair of optically polished glass 60mm diameter plates, one plane, one plano-convex mounted in metal frame. Pressure applied by three adjustable screws.



Cat. No. 43NRA \$18.00

### OERSTED'S LAW APPARATUS (POHL SWING)

Demonstrates that an electric current produces a magnetic field and introduces Ampere's RIGHT HAND rule. Apparatus allows current to be either direction. Height 410mm, Base: 150x150mm.



Cat. No. 420LA \$59.00

### OERSTED'S LAW APPARATUS (simple)

To show the action of electric current on a magnet. A 75mm cobalt steel needle supported on a pivot is mounted on a base and surrounded by a copper strip rectangle with two terminals.



Cat. No. 420LAS \$30.40

PHYSICS

## OHM'S LAW DEMONSTRATOR



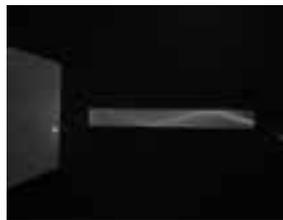
Board ready to operate with 5 MES lamps supplied. MES batten holders mounted on Perspex with removable plated connectors secured by

knurled nuts. Series or parallel circuits can be easily set up. (Ideally used with digital multi-meter page 73)

Cat. No. 42OLD \$55.00

## OPTICAL FIBRE SET

Optical fibres are made of quartz or plastic with good transmission. Light incident on one end of the transparent fibre is reflected internally and transmitted to the other end. The high quality optical fibre in this set is made of transparent acrylic resin mixed with fine aluminium powder which allows the course of the laser beam that passes through it to be observed; this is called 'smoked plastic'. Students can observe the path of the visible laser beam incident at one end of the fibre and repeatedly reflected until it reaches the other end.



Cat. No. 430FS \$150.80

## OSCILLOSCOPE, PC

The PicoScope Education Kit provides PC Oscilloscope simulation experiments for secondary schools, colleges and universities. Now every classroom can obtain world class equipment at an affordable price! Supplied with equipment for three experiments:

Speed of sound, Faraday's Law & AC dynamo. Also includes guidance for four more experiments: Value of a capacitor, Serial data waveform, Speed of a pulse along a cable and Acceleration due to gravity.

Kit contents:

- PicoScope 2205 Sampling PC Oscilloscope
- Speed of sound apparatus
- Faraday's Law apparatus
- AC dynamo apparatus
- PicoScope Education Kit Software CD
- Installation Guide
- BNC to 4-mm plug cables (2)
- BNC to crocodile clip cable
- USB cable
- Durable carry case



Cat. No. 42PSEK \$1,395.00

## PAPER BALLOONS

Good old-fashioned multi-coloured paper balloons! You can of course inflate them by blowing into the air hole, but it's much more fun to inflate a withered balloon by bouncing it from hand to hand and watching it inflate mysteriously! How does this happen? Pack of 10.



Cat. No. 45PB \$16.70

## PENDULUM BOBS

### STEEL

13 mm diameter	Cat. No. 48PBS13	\$2.00
19 mm diameter	Cat. No. 48PBS19	\$2.70
25 mm diameter	Cat. No. 48PBS25	\$5.80

### BRASS

13 mm diameter	Cat. No. 48PBB13	\$2.80
19 mm diameter	Cat. No. 48PBB19	\$3.60
25 mm diameter	Cat. No. 48PBB25	\$5.80

## PHOTOELECTRIC EFFECT (PLANCK'S CONSTANT)

With this fine I.E.C. apparatus, it can be proven that the energy level of light is dependant on the wavelength of the light and not the intensity. From the plotted graph PLANK'S CONSTANT can be determined. Supplied with illuminator, five filters and one set of apertures.



Cat. No. 43PE \$750.00

## (FOUCAULT'S) PENDULUM

This Foucault's pendulum apparatus is small enough to use with your hands! The spring type pendulum assists understanding of Foucault's theory with hands-on experience. In general, traditional models of Foucault's pendulum require a large space in a science museum as the length can be 10m or more. Since the theory of Foucault's pendulum results from the Earth's rotation, large models require half day to demonstrate the effect. This device generates a faster demonstration of the theory of Foucault pendulum. When you hold it and vibrate the small ball at the tip of spring bar inside the plastic cylinder, the spring serves as Foucault pendulum. For Example, if you set (hold)the equipment at the position higher than your eye level by certain degrees equivalent to the latitude of the point where you are, you will see how the pendulum changes its rotation angle relative to vibration direction as long as you keep rotating on your axis (360 degrees). Spring Pendulum Length approx. 110 mm (with ball), Overall Size: approx. 50 x 50 x 125mm, Cylinder 125 x 50mm LxD.



Cat. No. 45FP \$98.00

## PHOTOGATES – BeeSpi V

**NEW**  
Product

Measure speed and acceleration in an instant with the BeeSpi V! Unlike the traditional ticker tape-based velocity measuring experiment that is hard to set up and can be inaccurate, BeeSpi uses advanced light gate technology to measure the speed of an object in no time. Additionally, acceleration of an object can be easily calculated by using multiple BeeSpi's. BeeSpi allows additional class time to analyse the results of the experiment helping students to improve their understanding. (Also see Cat. No. 45GG, Free & Angular Fall Motion Apparatus and Cat. No. 45IG Velocity Dynamics Apparatus with BeeSpi V in this catalogue) An optional holding rod is available.



Specifications:

Speed: 0 to 999.9cm/s, 0 to 99.9m/s, 0 to 99.99km/h

Accumulated Lap Time: 0 to 99.99sec

Power Source: Two size AAA batteries (sold separately)

Size: 60 x 60 x 50mm

Weight: 55g (excluding batteries)

Functions: Clock function, Memory function

Cat. No. 45BSV **\$49.50**

10+ **\$45.00**

The Holding Rod for BeeSpi V is a specially designed adapter (holder) for the BeeSpi V to be secured to a retort stand at an arbitrary angle and/or height. By using this, your BeeSpi can be fixed at the appropriate angle/direction depending on the experiment you wish to carry out (experiments investigating Slope, Dynamics Carts, Free-fall motion, etc.). 200x8mm LxDiam.



Cat. No. 45BSVR **\$35.00**

10+ **\$33.00**

## PLASMA BALL

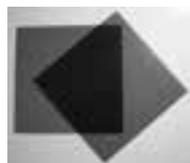
(NEBULA OR LIGHTNING BALL)

Students will be fascinated at the mysterious arcs of light emitted from the centre piece of the 200mm diameter ball. An exciting and dazzling display of electrically charged particles that leap (harmlessly) about the palms and fingers as patterns of light are created. Also responds to sound. Includes AC Adapter. PAT tested.



Cat. No. 42PB **\$108.80**

## POLARISING FILTERS



A pair of quality polarising filters 100x100mm which can be cut to smaller sizes if desired. Effectively demonstrates polarisation of light.

Cat. No. 43PS **\$52.00**

## POTATO CLOCK



The Two Potato Clock is designed to demonstrate the principle of an electrochemical cell. The LED clock runs on 2 potatoes, oranges, grapefruits, lemons or cans of fizzy soft drink. Potatoes not included!

Cat. No. 42PC **\$28.80**

## POWER SUPPLY Low voltage, 'Dual Mode'

Input 220/240 V.AC 50/60Hz Switched and Regulated. With volt and amp meter

This I.E.C. power supply is designed for general classroom use but it provides a regulated voltage output necessary for work in electronics. The moving coil meter on the front panel can be switched to monitor either the regulated DC output voltage or the load current. The



regulated DC output can be switched on and off without altering the preset regulated output voltage.

A 'Regulated' power

supply has the following benefits:

- The output voltage does not alter as the load increases from zero to full load. The output voltage does not alter even if the 240 V AC mains voltage varies.
- The output voltage is ripple free from no load to full load.
- Once the output voltage is set, there is no need to monitor it during experiments since it is always exactly constant regardless of fluctuations in load current and/or mains voltage. This means that the meter on the power supply can be switched to a second function - perhaps to monitor the load current.

Output: Mode 1 - Left side of front panel. For general purpose laboratory use - unregulated. .

- AC output: Switch selected 2, 4, 6, 8, 10 & 12 V AC (nominal) at 8 amp continuous or 10 Amp intermittent. 10 Min. on/10 min. off.
- DC output: Switch selected 2, 4, 6, 8, 10 & 12 V DC (nominal) full wave rectified and unfiltered at 8 Amp. Protection (both AC and DC outputs): Internal automatic self resetting thermal overload with audible 'click'.

Output: Mode 2 - Right side of front panel. For electronic experiments and other uses where a ripple free regulated output is required. This section of the instrument provides fully adjustable and electronically regulated DC output electronically filtered to better than 10 millivolt ripple Peak to Peak at full load.

- Output voltage: 1.5 to 20 Volt DC, fully adjustable. Regulation: Better than 0.5% voltage fluctuation from 'No Load' to 'Full Load' and for +/- 10% mains voltage variation.
- Output current: from 1.5 to 4V, 2A max., 4 to 8V, 3A max., 8 to 12V, 4A max and 12 to 20V, 5A max.

Protection: Output protection is fully automatic for both overload and short circuit. Output current automatically limits in the event of overload conditions. Output becomes normal upon the removal of the overload or fault.

Cat. No. 44PS43 **\$825.00**

## POWER SUPPLY, LOW

### VOLTAGE, LIONET

Input 220/240 V AC 50/60Hz  
Illuminated mains switch



Output: Selected by switch to 2, 4, 6, 8, 10, 12 V.AC/DC

- CE-Approved
- Safer: Instant overload cut-off based on amperage, not heat, at 5.5Amp with switch trip. Reset immediately if required by flick switch. Additional protection with FUSE. Plus a built in fan for cooling at higher output. Intrusion resistant vents.
- Passes P.A.T. test (N.Z.)
- Current: 5 Amps AC/DC.
- DC output is full wave rectified and unfiltered.
- Terminals: spin-free 4mm sockets.

Our most popular student power supply, this general purpose power supply for classroom electrical work where regulation and smoothing is not required. Excellent for Hodson Light Box and general use. Can be used for simultaneous AC & DC output but unit will cut out at approximately 5.5amp under all circumstances for maximum safety.

Cat. No. 44PSM5 **\$169.95**

Fuse Spares, Each Cat. No. 48FFB16 **\$0.70**

### POWER SUPPLY, LOW VOLTAGE, I.E.C.

Input 220/240 V AC 50/60Hz  
Illuminated mains switch  
Output: Selected by switch to 2, 4, 6, 8, 10, 12 V.AC/DC



This famous IEC Power Supply is a compact, general purpose power supply to provide switched AC and DC voltages.

The DC output is full wave rectified but not filtered. The illuminated mains switch is on the front panel. Housing has carry handles and rubber feet.

- Input: 220/240V.AC. 50/60Hz 0.5 Amp Standard removable mains cable.
- On/off: By illuminated mains on/off rocker switch on front panel.
- Outputs: AC output: Switch selected 2, 4, 6, 8, 10, 12V. AC (nominal) at 6 Amp continuous. DC output: Switch selected 2, 4, 6, 8, 10, 12V.DC (nominal) full wave rectified and unfiltered 5 Amps continuous.
- Protection: Overload and short circuit protection is by an audible, internal, automatically self-resetting thermal overload. If both the AC and DC outputs are used simultaneously, when the total load exceeds about 6 amps, the overload will trip.

Cat. No. 44PS5 **\$190.00**

### PHYSICS POWER SUPPLY (Smoothed)

This power supply is smoothed but **NOT** regulated. This means the output has very low ripple but is not monitored by a feedback loop to provide constant Voltage output. (If this feature is desired, refer to the IEC 'Dual Mode' unit Cat. No. 44PS43 on page 76. The 44PS43 has an ACTIVE regulating electronic circuit which produces a continuously changing voltage regulation dependent on a feedback from the output.) The 44PSS low-cost power supply is ideal for Physics



experiments where a smoothed but **not regulated** power source is adequate. Approved by CE and passes Australian PAT test.

- Regulated (smoothed).
- 0-12Volt, 2V Steps.
- 5.0Amps Maximum Combined.
- Outputs:  
AC output: Switch selected 2, 4, 6, 8, 10, 12V AC (nominal) at 5.0 A, continuous.  
DC output (no filter): Switch selected 2, 4, 6, 8, 10, 12V DC (nominal), bridge rectified and 5A continuous.  
DC output (filtered): Switch selected 2.9, 4.8, 6.9, 9.2, 11.5, 14V DC with no load (nominal), bridge rectified, capacitor filtered and 5.0A continuous. Voltage under load will be closer to switch selected value.
- CE approved and stackable.
- Overload protection (sound & LED).
- Overheat protection with Auto-Start fan cooling system.

Cat. No. 44PSS **\$262.00**

### POWER SUPPLY EXTRA HIGH VOLTAGE VARIABLE

This special purpose compact laboratory power supply from IEC may be used for electrical experiments requiring smoothed DC high voltages. The output voltage may be smoothly adjusted from zero to more than 6000V.DC. at no



load. As current is drawn from the unit, the voltage falls quickly so that the short circuit current (zero output volts) is approx. 3mA. The power supply is used with discharge tubes and similar experiments where the current flow is very small. The output voltage is monitored by a large meter. Mains power is controlled by an illuminated ON/OFF switch and the high voltage output is controlled by a separate ON/OFF switch.

Cat. No. 44EHVPS **\$840.00**

### POWER SUPPLY / TRANSFORMER, 6V/12V AC

This very compact IEC Power source is a simple transformer with outputs of 6V AC and 12V AC with a total load of 4 amps and is supplied complete with a power cable for connecting to mains. It is particularly suitable for the 'Hodson' Light Box because it can fit the reserved compartment inside the styrene foam housing. It is suitable for lamps of all types including the IEC low voltage Microscope Lamps. Each output is fitted with a self-resetting overload that trips above 4 amps and resets when the overload is removed.



#### SPECIFICATIONS:

Input: 220/240V.AC. 50/60Hz. approx 0.5 amp. Power applied by cable provided.  
Outputs: 6V AC & 12V AC. Total load max. current: 4 Amps.  
Protection: By self resetting thermal overload in each output.

Cat. No. 44PST **\$105.00**



## PRISMS

Acrylic, 64mm.

Cat. No. 43P60 **\$16.40**

Hollow (may be filled with liquids to alter Refractive Index):



Prism, Glass, 38mm, Triangular

Cat. No. 43PGH **\$4.50**

Prism, Glass, 50mm, Triangular

Cat. No. 43PGH5 **\$5.25**



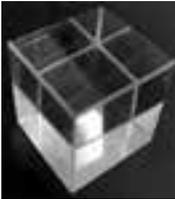
Solid:

Prism, White Glass, 25mm, Triangular

Cat. No. 43PGW25 **\$14.00**

Prism, White Glass, 38mm, Triangular

Cat. No. 43PGW38 **\$14.80**



Prism, White Glass, 50mm, Triangular

Cat. No. 43PGW50 **\$28.00**

Cube, White Glass, 31x31x31mm

Cat. No. 43CGW **\$12.00**



Glass Block, Half Round, 90x43x18mm

Cat. No. 43GBHR **\$8.00**



Prism, right angle, 35x25x25mm approx.

Cat. No. 43PGR35 **\$3.80**

Prism, right angle, 58x42x42mm approx.

Cat. No. 43PGR50 **\$4.40**

Prism, right angle, 70x50x50mm approx.

Cat. No. 43PGR70 **\$6.50**

Prism, rectangular block, 115x65x18mm approx.

Cat. No. 43PGR **\$9.90**

(NOTE: Dimensions may vary slightly.)

## PROJECTILE LAUNCHER, MINI



Projectile Launcher (mini) includes Photogates. Excellent unit includes mini Photogates that will connect direct into our Large Timer (Cat. No. 45TDL). Simple to use, ideal for student groups, 3 x Propulsion settings, multiple angle settings. 2 x 16mm steel balls supplied.

Cat. No. 45PLM **\$187.00**

## PROJECTION RIPPLE TANK, with Accessories

This excellent quality ripple tank provides a comprehensive demonstration of the general properties of waves. The wave images are projected on the screen allowing students to remain seated. No need to use an OHP. Full kit includes Projection Ripple Tank with Vibration Generator, LED stroboscope (to adjust & read frequency 30 to 100Hz in 0.1Hz steps) & Frequency Meter. Screen size 30x30cm allows a very detailed and clear image. Can be used to demonstrate Reflection & Refraction, Interference Phenomena, Diffraction, Plane Parallel Waves and Propagation.



Projection Ripple Tank Kit complete:

Cat. No. 46RTP **\$716.00**

## PULLEYS, NYLON, IEC

In frame with hooks. 50mm dia. pulley.

A strong quality nylon pulley set in an alloy frame with a hook at each end. The pulley has a very low mass and friction. Performance and durability is excellent. Pulley diameter 50mm, overall length with hooks 115mm. Made by IEC.



Single

Cat. No. 45PS256 **\$9.85**



Double

Cat. No. 45PD257 **\$13.80**



Triple

Cat. No. 45PT258 **\$19.75**



## PULLEY ON CLAMP

Strong nylon pulley mounted on a metal frame, with clamp screw to attach to bench. Jaw opening 28 mm.

Cat. No. 45PCF259 **\$18.50**

**PULLEY ON ROD**

**Nylon pulley with aluminium rod**



Nylon Pulley mounted on a spindle and supported on an aluminium rod. Fits into standard retort stand

bosshead. Very low friction and mass. Pulley 50mm diameter. Overall length 210mm. Rod diameter 8mm.

**Cat. No. 45PR260 \$15.80**



**PULLEY - TRIPLE**

Triple in vertical line. 30, 40, 50 mm made of nylon and metal frame with hooks at each end.

**Cat. No. 45PC3218 \$29.60**

**PULLEYS, METAL**

**Pulley Metal On Clamp, Benchmount, 110mm Opening**



**Cat. No. 45PCL110 \$19.65**

**Pulley Metal Differential 38, 50 & 62mm**



**Cat. No. 45PD \$13.50**

**Pulley Metal Differential 38, 50 & 62mm, on Rod**



**Cat. No. 45PDR \$12.00**

**Pulley Metal Double 50mm**



**Cat. No. 45PMD \$5.30**

**Pulley Metal Double In-Line 50 & 40mm**



**Cat. No. 45PMDL \$5.00**

**Pulley Metal Single 50mm**



**Cat. No. 45PMS \$4.80**

**Pulley Metal Triple 50mm**



**Cat. No. 45PMT \$9.40**

**Pulley Metal Triple In-Line 50, 40 & 28mm**



**Cat. No. 45PMTL \$14.00**

**Pulley Metal Single 50mm Benchmount (25mm Opening)**



**Cat. No. 45PSB \$9.20**

**Pulley Single 70mm with Clamp (38mm Opening for bench mounting, or mount on a retort rod using the holes & screw provided.**



**Cat. No. 45PSC \$16.60**

**Pulley Single 38mm Diam. on 150mm Rod**



**Cat. No. 45PSR \$7.00**

**Pulley Single 38mm Diam. with Rod & Clamp (33mm opening)**



**Cat. No. 45PSRB \$16.95**

**RATTLEBACK**



The Rattleback demonstrates Newton's laws with the flick of a finger. Due to its offset centre of gravity, this scientific curiosity has a preferred direction of rotation: It wants to spin counter clockwise. It is a semi-ellipsoidal top which will spin on its axis in a preferred direction. But, if spun in the opposite direction, it becomes unstable, "rattles", stops and reverses its spin to the preferred direction. This spin-reversal motion seems, at first sight, to violate the angular-momentum conservation law of physics.

**Cat. No. 45RB \$5.40**

**RHEOSTAT, sliding**

Wound on porcelaine pipe.



2.3 amps, 50 ohms. **Cat. No. 44RH23 \$76.50**

2.8amps 75 Ohm **Cat. No. 44RH28 \$58.00**

## ROBOTICS

### Formula AllCode Robot Buggy (Robot only)

The Formula AllCode robot buggy with Bluetooth capability enables you to program the robot from any host with a Bluetooth connection. The buggy itself includes a fabulous specification, LEDs, distance and light sensors, line following sensors, integrated metal gears and encoders, microphone, speaker and more.



If you are an advanced robotics user, or a beginner looking to develop your robotics knowledge and understand, the Formula AllCode is perfect for you. The Application Programming Interface (API) allows for compatibility with Windows, OS X, Android, Raspberry Pi and other Linux devices using software such as VB/C#, Python, MATLAB, LabVIEW, Flowcode 6 and many more.

A full course is available free of charge on the Matrix website.

Cat. No. 42MXRB **\$448.00**

### Formula AllCode - Deluxe Robot Kit

The Formula AllCode deluxe kit gives you the perfect solution for containing your Formula AllCode in a neat, easy to store and easy to transport carry case. You also receive a complete set of desktop maze walls for problem solving and a double-sided maze mat to complete a range of line following and other activities.



Cat. No. 42MXRBD **\$576.00**

## SIGNAL GENERATOR, 'WAVE-LAB'

The IEC digital "Wave~Lab" is a special dual wave Signal Generator for the study of wave theory. This microprocessor generates 2x sets of very accurate and absolutely stable frequencies up to 40kHz that can be added to one another, exactly shifted in phase relative to one another or modulated by one another. Waveforms can be selected as sine, triangular or saw-tooth and high power amplifiers permit the driving of large speakers or headphones for private listening. An oscilloscope can be used to view the waveforms and effects. Harmonics, beat frequencies and other phenomena can be studied. Output power is digitally controlled and a keyboard system allows any frequency to be entered. External signals can be applied and a microphone and headphones are included in the kit. A pair of suitable wide range speakers is available as optional.



Cat. No. 44SGWL **\$1,175.00**

## SIGNAL GENERATOR, MINI WAVE

The general purpose IEC **Digital Signal Generator** is a very easy to use, compact, microprocessor driven, super-accurate, and super-stable instrument for the Physics and Electronics laboratory. The interface is a large 5 digit red LED display. This excellent unit is a broad range, high current instrument and the selectable waveforms are: sine, triangular, sawtooth and square in shape. It provides high currents up to 1 amp directly to loads at up to 15V peak to peak which makes the use of amplifiers unnecessary.



### Applications:

- Signal source for any Electronics Kit and for many experiments.
- A regulated DC power supply, 0-7.5V.DC. at 1 amp.
- For a signal source for the IEC Kundt's Apparatus tone generator.
- For demonstrating features of an Oscilloscope.
- For running vibrators (Melde's apparatus etc.) and loud speakers.
- For speed of sound experiments in air and solids.
- For determining resonance in inductive and capacitive circuits.
- For the study of reactance in AC circuits..... and so on.

### Specifications:

Input: 220/240V.AC. 50/60 Hz. Approx. 0.2 amp.

Frequency: Very wide range: 0.1 Hz. to 99999 Hz.

Fast adjustment: Button selects digit, then change digit UP and DN (0-9).

Display: Large red LED, 5 digit display.

Accuracy & Stability: Crystal accuracy .... Error: up to approx 0.01%

Waveforms: Sine, Triangular, Sawtooth and Square wave.

Voltage output: Adjustable from 0 to 15V peak to peak (0 to 5V.RMS)

Current output: Automatic limit, 1 Amp max. into any load or short circuit.

Cat. No. 44SGMW **\$440.00**

## SOLAR PRODUCTS

### SOLAR HYDROGEN EDUCATION KIT

Invent your own clean energy applications using fuel cells and the power of the sun. Generate hydrogen in a completely sustainable process by using a solar panel to power water electrolysis. Convert hydrogen into electrical energy with the PEM fuel cell and power your applications. As a starting-off point for would-be inventors, the kit comes with a small electric motor and propeller blade.



Cat. No. 42SHE **\$156.00**

### I-H2GO SOLAR / FUEL CELL CAR

Drive the most technologically advanced toy car on the market. Harness the power of sunlight to charge the hydrogen refuelling station via the solar panel. Use the station to generate hydrogen through water electrolysis, refuel the car and to charge up the super capacitor. Transparent casing and LED lights are designed to highlight all these electrochemical processes—the same processes as in real-scale hybrid vehicles. Fuel cell technology converts hydrogen to electrical energy and the super capacitor engages when the car accelerates. Control the car from your iPhone or iPad and engage gyro-steering to turn the i-H2GO's wheels simply by tilting your device.



Cat. No. 42H2GO **\$299.00**

### SOLAR CELLS



Large solar cell, 12 Volt 165 mA with lead, Dimensions 315 x 162 x 22 mm.

Cat. No. 42SOL **\$65.00**

### PHOTOELECTRIC CELL



With this photoelectric cell with alligator clip leads you can operate small motors, etc without batteries. Open voltage: 1.5V, Short circuit current: 450 mA, 110 x 60mm (\* These values are from direct sunlight.)

Cat. No. 43PEC **\$29.90**

### SOLAR FURNACE



Demonstrate the extraordinary power of the sun by concentrating solar energy with this 12" diameter parabolic dish. Using its reflective mirror, the furnace can generate extreme temperatures to heat materials placed in the attached copper receptacle.

Cat. No. 43SF **\$86.80**

## SOLAR ENERGY KIT



The components of this basic kit permit the student to connect a solar cell to three different devices to see the conversion of light into electrical power. The **Electrical energy** is then converted into:

**Mechanical energy:** ... to run a fan and to push air from one place to another, **Mechanical energy:** ... to vibrate a piece of material so it produces sound energy, **Heat energy:** ... to heat a light globe filament so hot that it gives out light!

The kit consists of the following components:

- 1x Solar cell rated at 1.0 Volt and 400 mA under direct sunlight.
- 1x Electric motor specially designed to run at very low voltage.
- 1x Plastic fan to fit to the motor
- 1x Lamp socket and lamp of the correct rating to glow when 1 volt is applied.
- 1x Buzzer, suitable for very low voltage operation.
- 1x Pair of connection cables with Alligator clips at each end.
- Information & instruction sheet.

Cat. No. 42SOLK **\$25.00**

### SOLENOID AIR CORED



660 turns of enamelled copper wire rated at 3 amps. For use with Current balance and Mass of Electron experiments involving the magnetic effect of an electric current. Complete with 4mm spin free socket terminals. Dimensions: 160 x 77 x 67mm (l x w x h)

Cat. No. 42ACS91 **\$98.00**

### ARE YOU GETTING TECHEMAIL?

*If you are not receiving the Delta Science 'Techemail' you could be missing out!*

*Techemail keeps you up to date on new products, specials, promotions, clearance sales and the like. These are available only to subscribers, so if you are not receiving Delta's Techemail, just send an email to [science@deltaed.co.nz](mailto:science@deltaed.co.nz)*

*with the words*

**SUBSCRIBE TECHEMAIL**

*and we shall add that address to our mail list. Similarly, you may send*

**'UNSUBSCRIBE'**

*to be removed from the list anytime.*



## SOUND PIPE

Whirling, five possible frequencies.

Cat. No. 46SP **\$10.80**

## Mega-Super Slinky

Plated metal. 165 x 75 mm dia.

Cat. No. 45SSM **\$16.00**

## SuperSnake

Long thin Spring 1800 x 20mm. Stretch it on the floor and create wave forms.

Cat. No. 45SSS **\$25.00**

## SPECTRUM TUBES

Capillary Type, overall length approx. 245mm (incl. contacts)



Air	Cat. No. 42SDTAI	<b>\$42.00</b>
Alcohol	Cat. No. 42SDTE	<b>\$42.00</b>
Ammonia	Cat. No. 42SDTAM	<b>\$42.00</b>
Argon	Cat. No. 42SDTA	<b>\$42.00</b>
Carbon Dioxide	Cat. No. 42SDTC	<b>\$42.00</b>
Helium	Cat. No. 42SDTHE	<b>\$42.00</b>
Hydrogen	Cat. No. 42SDTH	<b>\$42.00</b>
Iodine	Cat. No. 42SDTI	<b>\$42.00</b>
Krypton	Cat. No. 42SDTK	<b>\$42.00</b>
Mercury	Cat. No. 42SDTM	<b>\$42.00</b>
Neon	Cat. No. 42SDTNE	<b>\$42.00</b>
Nitrogen	Cat. No. 42SDTN	<b>\$42.00</b>
Oxygen	Cat. No. 42SDTO	<b>\$42.00</b>
Sulphur	Cat. No. 42SDTS	<b>\$42.00</b>
Water Vapour	Cat. No. 42SDTHO	<b>\$42.00</b>

## Spring, Plastic

This light-weight strong plastic spring is more manoeuvrable than the metal SuperSnake so it can more be easily and safely used by students in the air rather than on the ground, so friction is therefore less of a factor. Classroom demonstrations are made easier and more visible. Investigations include measurement of the phase of reflected waves, the velocity of transverse or longitudinal waves, determination of the frequency & wavelength of a wave and experiments on standing waves. This spring assists students as its lighter mass requires less effort than heavier metal springs. 'Wire' diameter 1.5mm, O.D. 17mm, length 500mm. Complete with five experimental lesson plans.



Cat. No. 45SP **\$14.00**

## SPRINGS, Hookes Law, IEC

May be used for any purpose but their diameters and lengths, together with the choice of wire section sizes make them very suitable for experiments relating to 'Hooke's Law'.



PROPORTIONAL  
Set of 6  
Cat. No.45SHP **\$35.20**



NON-PROPORTIONAL  
Set of 5  
Cat. No. 45SHPN **\$30.00**

## SPECTRUM TUBE POWER SUPPLY (EHV)

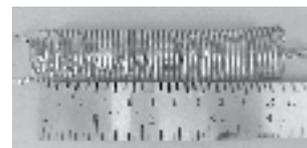


Extra high voltage power supply & tube support for operating standard spectrum tubes. Complete with recessed tube support, socket, support pillar and switch. Tubes not included.

Cat. No. 44PSEHV **\$452.00**

## SPRING, Hookes Law

This spring has been requested and designed specifically for N.Z. schools for the determination of Hooke's Law. Made of plated wire 1.4mm diameter, spring diameter 2.5cm & length 6.5cm (Compressed) or 10.5cm (Relaxed).



Cat. No. 45SPHL  
20+ **\$2.00**  
**\$1.75**

## SPRINGS

### Super Slinky

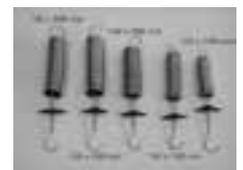
Plated metal. 100 x 75 mm dia.

Cat. No. 45SS **\$14.00**



## SPRING SET

Spring Set of various sizes, set /5. All with indicators and hooks. Sizes 150x20, 150x18, 140x20, 125x15, 130x15mm (Length x Diameter). Many uses in the lab. (eg Hooke's



Law) Cat. No. 45SSH **\$26.00**

## SPRING, SHORT EXTENSION



20mm length x 16mm diameter excluding loops; total length 50mm. Coils open at 20g load and extend to approx. 60mm with 100g load. Max. extension 150mm recommended.

Cat. No. 45SPE **\$1.50**

## SPRINGS, EXTENSION

Small tightly-wound springs for investigating Hooke's Law, basic harmonic motion, etc. (Same form as 45SPE above.) Sold in packs of 10.

A. 23 mm length x 18 mm diameter excluding loops; total length 56mm. Coils open at 10g load. Length increases by approximately 18mm with each 10g increment. Maximum recommended load 100g.

Pk/10 **Cat. No. 45SE1 \$15.40**

B. Approx 23 mm length x 37mm diameter excluding loops; total length approx 70-90mm. Coils open at 50g load. Extension with 100g load excluding loops approx 50-52mm

Pk/10 **Cat. No. 45SE15 \$16.80**

C. Approx 32 mm length x 37mm diameter excluding loops; total length approx 10mm. Coils open at 50g load. Extension with 100g load excluding loops approx 80-83mm

Pk/10 **Cat. No. 45SE2 \$10.00**

## SPECTROSCOPE



The Student Spectroscope is fitted with a high efficiency grating to the eyepiece which produces a brilliant spectrum even with poor light.

The adjustable slit permits the maximum resolution and the sharpest bands at predominant wavelengths which are viewed directly against a scale calibrated in nanometers.

Dimensions: 1190 x 100 x 25mm

Cat. No. 43S37 **\$49.95**

## STROBOSCOPE



### Model XE, LED, Digital

Input: 12V AC/DC. Large 5 digit LED readout. Crystal locked for increased stability. Fast self calibration. Single range with press button to change frequency. With plug pack.

Cat. No. 44SSD3808 **\$795.00**

## SWITCHES



### Knife Switch

Low voltage, molded base with plated contacts and screw connections, Single Pole, Double throw.

Cat. No. 42KSSD **\$5.95**



### Knife Switch

Low voltage, molded base with plated contacts and screw connections, Double Pole, Double throw.

Cat. No. 42KSDD **\$6.00**



### Knife Switch

Low voltage, mounted on insulated plate with three 4mm socket terminals. Single Pole, Double throw.

Cat. No. 42KSMSD **\$14.35**



### Knife Switch

Low voltage, mounted on insulated plate with three 4mm socket terminals. Double Pole, Double throw.

Cat. No. 42KSMD **\$10.50**



### Rocker Switch

A simple ON-OFF type switch with which most students will be familiar. With two mounted banana sockets.

Cat. No. 42SR **\$13.40**



### Contact Switch

Solid contact switch with banana sockets. Spring arm, press knob, contact stud and a connecting strip with two 4 mm terminals on plastic base of 100 x 60mm.

Cat. No. 42SC **\$6.95**

## ORBIT™ TELLURIUM 2

A fully revised, easy-to-use illuminated teaching model of the Sun, Earth and Moon. Easily demonstrate night and day, the seasons, phases of the Moon and eclipses. With this robust and flexible model you can:



- Instantly engage pupils and illustrate complex solar relationships more easily. Switch between the large and small Earth and Moon set-up to explain different topics.
- Use the geared operation to show the Earth orbiting the Sun, the moon orbiting the Earth and the Earth spinning on its axis at the same time.
- Teach with manual control of the earth and moon orbits to demonstrate specific events.
- Benefit from superior design and gearing to achieve more accurate demonstrations.

- Shine the powerful light from the sun onto the large Earth to model night and day, the seasons, eclipses and create visible shadows.
- Demonstrate the phases of the moon and frequency of solar and lunar eclipses.
- Explain complex topics easily with the teacher guide, date/season indicator and phase of the moon dial.

Cat. No. 44TELL **\$625.00**

**THERMOCOUPLE** - Simple, Copper/Constantan, 200mm Length



Cat. No. 42TC **\$9.50**  
10+ **\$8.75**

### TICKER TIMER



A very rugged model providing fixed frequency of 50 dots per second operating from 5-12 Volt AC supply of 50Hz (60 dots per second from 5-12 Volt AC supply

60 Hz). Design is such that there are no parts to adjust, lose or wear out. Base is heavy and provided with rubber feet so that clamping of the unit is not necessary. A rod is provided at the rear for support from a retort stand bosshead or similar. Platform is adjustable so that a number of tracks may be made on the one tape and the carbon disc is efficiently used. Input is by 4mm socket terminals. Packed complete with carbon discs and roll of paper tape (30m long and 16mm wide). Made by IEC. Input: 5-12 V AC only

Cat. No. 44TTK **\$60.00**

Also see below the new BeeSpi V velocity light gate!  
Replace noisy ticker timers and messy tape.

### TICKER TAPE

To fit recording timers. Available by the single roll.

180m x 16mm. Cat. No. 47TTWP **\$10.80**  
30m x 15mm. Cat. No. 47TTWPL **\$2.40**

Self-marking, 15mmx100m, Pk/6.

Cat. No. 47TSM15 **\$44.00**

### CARBON DISCS

To fit recording timers. Diameter 45mm. Pack of 100.

I.E.C. Cat. No. 47TTCDI **\$11.50**  
Supertek Cat. No. 47TTCD **\$8.00**

### LIGHT GATE - BeeSpi V (A great alternative to Ticker Timers)

Say goodbye to noisy ticker timers! Measure speed and acceleration in an instant with the BeeSpi V. Traditional ticker tape based speed experiments are hard to set up and can be inaccurate. The BeeSpi V uses advanced light gate technology to measure in no time at all the speed of an object and also the acceleration of an object by using multiple BeeSpiV's. This provides additional class time to analyse the results of the experiments and helps the students acquire a deeper understanding. For accurate placement, use the unique BeeSpi V Retort Rod holder Cat. 45BSVR. This specially-designed adapter for retort stands secures the BeeSpi V at an arbitrary angle and/or height, depending on the experiment you wish to carry out (Slope, Dynamics Cart, Free-fall motion, etc.)

#### Specifications:

- Speed: 0 to 999.9cm/s, 0 to 99.9m/s, 0 to 99.99km/h
- Accumulated Lap Time: 0 to 99.99sec
- Power Source: Two size AAA batteries(sold separately)
- Size: 60x60x50mm
- Weight: 55g(excluding batteries)
- Functions: Clock function, memory store last 5 measurements
- Units cm/s, m/s, km/h



BeeSpi V	Cat. No. 45BSV	<b>\$49.50</b>
	10+	<b>\$45.30</b>
Rod Holder	Cat. No. 45BSVR	<b>\$34.95</b>



45BSV



45BSVR

### TIMER DIGITAL EVENT c/w PHOTO GATES

Digital Electronic Timer with Photo Gates & FREE-FALL apparatus. With this versatile timer students can measure the time interval between two photogates, measure the time it



takes to pass through one photogate, measure acceleration of a released ball, determine the acceleration due to gravity (with a 'picket fence'), determine elastic and inelastic collision times, calculate cycles, determine the frequency of a rotating object, determine the period of a pendulum, and count time with great accuracy.

Cat. No. 45TDE **\$315.00**

PHYSICS

## TIMER DIGITAL LARGE

This Large Digital Electronic Timer works with photogates to measure the time interval between two of them, measure the time it takes to pass through one photogate, determine acceleration using photogates, measure acceleration



of a released ball, determine the acceleration due to gravity (with a picket fence), determine elastic and inelastic collision times, calculate cycles, determine the frequency of a rotating object and can be used with Airtracks and Dynamics trolleys. (Can be used with Mini Projectile Launcher 45PLM – see page 89.

Students can choose from five timing modes: Interval (single- or double-photogate timing for experiments on speed or acceleration), Frequency (for periodic motion), Period, Stopwatch, Count. Display 23Long x 7.5cm wide (class Viewing). Accurate to within 0.001 seconds!

Cat. No. 45TDL **\$360.00**



## TORNADO TUBE™

Demonstrates the vortex type forces present in tornados

Cat. No. 45TT **\$3.95**

## TRANSFORMER, DISSECTABLE



This I.E.C. apparatus has been designed to demonstrate the basic principles of the AC transformer. The various coils and cores can also be used to experiment in electromagnetism. Parts can be assembled to make a

transformer, spot welder, solenoid, magnet, choke and induction heater. 230V mains primary coil accepts a 3-core flex and plug. On/off switch and pilot light.

Cat. No. 42TD **\$904.00**

## TUNING FORKS

Select from Key of A (426.6 Hz) through to Key of G (384 Hz). Blued steel.



A	Cat. No. 46TFBSA	<b>\$6.75</b>
B	Cat. No. 46TFBSB	<b>\$6.75</b>
C	Cat. No. 46TFBSC	<b>\$6.75</b>
D	Cat. No. 46TFBSD	<b>\$6.75</b>
E	Cat. No. 46TFBSE	<b>\$6.75</b>
F	Cat. No. 46TFBSF	<b>\$6.75</b>
G	Cat. No. 46TFBSG	<b>\$6.75</b>

Set of 8, in case. Blued steel.

Cat. No. 46TFC8 **\$36.50**

Set of 13, in case. Chrome steel.

Cat. No. 46TFC13 **\$44.00**

## TUNING FORK RESONANCE BOX, SYMPATHETIC, Set of 2



Resonance and beat demonstrations can be undertaken. One fork responds to the other showing how sound waves create sympathetic vibration over distance. Using the adjustment weight, the mass of one of the forks can be adjusted for beat experiments. Two aluminium forks mounted on resonance box with weight and hammer. Two Models:

Small (180 x 85 x 55mm)	Cat. No. 46TFRB	<b>\$36.00</b>
Large (295 x 115 x 65mm)	Cat. No. 46TFRB2	<b>\$90.00</b>

## TURBINES, WIND (STEM)



### SKY-Z STANDARD WIND EDUCATION KIT - BASIC (AC)

Build a turbine and explore wind energy with this compact innovative design. Features include three 20cm blades within a three-blade hub with pitch angles, as well as four coils and four magnets to build and customize the generator.

This turbine creates alternating current power. The built-in LED light helps to indicate the generated power. Other customizable features include different blade sizes and a six-blade hub that allows for limitless experimentation. Weight: 1.25kg, Assembled Dimensions: 650mm blade to floor, 450mm nose to floor, 160mm base.

Cat. No. 42SKYZ **\$128.00**



**SKY-Z STANDARD  
WIND EDUCATION KIT -  
INTERMEDIATE (AC)**

Description as per the SKY-Z but four types of rectification experiments are included. The SKY-Z being a powerful small educational wind turbine goes very well with the 4 way rectification kit. The SKY-Z Plus is the ultimate product because

it encompasses a wide range of wind turbine and power studies to get you off the ground! Weight: 1.3kg. Assembled: 650mm blade to floor, 450mm nose to floor, 160mm base.

Cat. No. 42SKYZP **\$149.60**



**SKY-Z LIMITLESS  
TURBINE BASIC (AC)**

26" Tall Wind Turbine. Build your own wind-powered magnetic induction generator using 4 coils and 4 magnets. Produces 1.5v to 7v at 150mA. Includes 6X 6 inch, 6X 8 inch &

6X 10inch blades, variable hub with pitch angles and magnetic induction generator components. Students can experiment with the variables to explore the most efficient configurations.

Cat. No. 42SKYZL **\$160.00**



**SKY-Z MINI  
TURBINE BASIC (DC)**

20" Tall Wind Turbine. Build your own wind-powered magnetic induction DC generator using 4 coils and 4 magnets. DC motor produces 6-24V (max at 2700RPM's)!

- 20" Tall Wind Turbine with DC Motor
- Max efficiency at 2700RPM
- Power: Up to 1.2W
- Includes set of x6 6inch blades
- 6 Blade variable hub with pitch angles

Cat. No. 42SKYZD **\$74.00**



**SKY-Z LIMITLESS  
TURBINE BASIC (DC)**

26" Tall Wind Turbine -Build your own wind-powered magnetic induction DC generator using 4 coils and 4 magnets. DC motor

produces 6-24V (max at 2700RPM)!

- max efficiency at 2700RPM
- Power up to 1.2W
- Includes sets of 6 of each size blade (6, 8, & 10 inch) and variable hub with pitch angles
- Large & Small Tower for height variables
- Students can experiment with the variables to explore the most efficient configurations.

Cat. No. 42SKYZDL **\$128.00**



**SAVONIUS WIND  
TURBINE AC -  
INTERMEDIATE**

Description as per the SAVONIUS WIND TURBINE V3 but this kit gives you the ability to rectify your power from alternating current to direct current. Four types

of rectification experiments are included. The Savonius V3 Plus takes students one step further into the world of electronics, signal rectification & circuit design. Popular amongst high school students who have demonstrated eagerness to learn more, this product encourages creativity and logic building. Assembled turbine dimensions: 204 mm x 145 mm x 145 mm, rectifier kit dimensions: 125mm x 50mm x 15mm, weight: 700g.

Cat. No. 42SWTP **\$110.00**

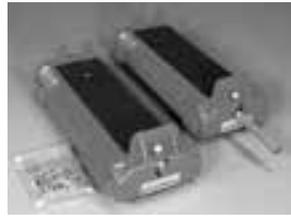
## TROLLEYS- DYNAMICS CARTS

**With safety catch. High quality, low cost!**

**The 'Hyper FIRE CART' - Pair**



The FIRE CARTS are a new improved design of the old dynamics carts used in most schools for basic dynamics experiments.



### Features:

- Low cost, high quality, attractive and very durable design.
- Easy to use Safety Catch to prevent unwanted firing.
- Low friction, low mass wheels for better accuracy.
- Carts accurately made to run in a straight line.
- Wheels mounted inside the body to prevent tangling with cords.
- Rigid non-twist body designed for heavy loads.
- Non-slip platform surface.
- Stackable design for doubling or tripling weight.
- Hook & Claw pads for non-elastic collisions.
- All replacement parts easily available. .
- Accurate cart weight of 600g.

Pair: **Cat. No. 45TDC \$143.20**

## VOLTMETERS Refer Meters.

## VAN DE GRAAFF GENERATOR

**220-240 VAC 50/60 Hz**



This model is now IEC's standard Large model Van De Graaff. Now with a 250mm diameter ball, this model now uses an insulation tube to protect the belt and the pulleys, belt and combs are accessible for inspection, cleaning or adjustment at both the top and bottom ends of the tube. The belt is made of a long lasting Silicone rubber and both performance and reliability is

excellent. The whole instrument can easily be dismantled down to the components to reduce size for transport. The drive unit can easily be removed for return should repair ever be required thus reducing freight costs. Supplied with 1x spare motor drive belt and 1x spare charging belt. Supplied with 1x spare motor drive belt and 1x spare charging belt.

**Cat. No. 42VDG400 \$740.00**

### Specifications:

**Power Input:** 220/240V.AC 50/60 Hz. Approx. 1 Amp

**Output:** 400 kV under good conditions. Approx. 120mm spark between balls.

**Size:** Overall: 800mm high. Dome: 250mm.d. Discharge ball: 80mm.d.

**Belts:** Charging belt: 55mm wide, 42VDGB3. Motor belt: 42VDGBM

**Drive:** Motor, low voltage, with belt reduction and electronic speed controller.

( See also ELECTROSTATIC GENECON Page 73 )

## ACCESSORIES

**Quick and easy to assemble without tools**

**Set of accessories comprising:**

- Head of hair with 4 mm plug.
- Neon bulb in holder.
- Insulating rod with suspended conducting particle.
- Needle point discharger/pivot for whirl, with 4 mm plug.
- Rotary discharge whirl.
- Insulated cylinder with conductive vibrating particles, with 4 mm plug.



**Cat. No. 42VDGA \$174.00**

Belt, Silicone Rubber for all Large V.D.G's

**Cat. No. 42VDGB3 \$36.00**

*Replacement parts available, please ask*

## VAN DE GRAAFF UPGRADE KIT

Converts the older IEC Van de Graffs with a 'divided' ball to the newer type with friction-free upper pulley ball races. Includes bracket assembly, Collar, Top Comb and Joinless Rubber Belt.

**Cat. No. 42VDGUK \$149.00**

## VELOCITY DYNAMICS APPARATUS

**with BeeSpi V (I-Gauge)**

The I-Gauge is most suitable for dynamics experiments involving a ball rolling down a track. Included is a BeeSpi V as the velocity measuring gate for the ball. Investigations include:

1. Correlation of height and speed.
2. Correlation of impact force to an object with height/speed/weight.

The angle of slope is adjustable from 0 to 45 degrees, which is measurable with a protractor on one side of the track. With the scale at the side of the track, you can measure the distance of objects moved by the impact. If a BeeSpi V is set on the track, it displays the velocity of the sphere directly.



**Cat. No. 45IG \$248.00**

## VIBRATION GENERATOR



Vibration generator with spring. Total frequency range 0.5 to 5000Hz, dimensions 90x90x100mm, 15W. Gives mechanical oscillations when fed signal from a generator.

Spring oscillates to show wave patterns. Includes accessory kit 45VGA

Full Kit	Cat. No. 45VG	\$128.00
Accessory Kit only	Cat. No. 45VGA	\$64.00

## WHIMSHURST MACHINE



Traditional electrostatic generator consists of two discs with radial aluminium segments driven in opposite directions by hand wheel and belt. With two Leyden jars on wooden base.

Cat. No. 42WHM \$199.50

## WIND POWER GENERATOR



This demonstration apparatus consists of a propelling blade coupled with a dynamo, mounted on a 2 bearing bush on a heavy metal base. Overall dimensions: 33 x 18 x 48 cm. The dynamo unit is connected to the rotor shaft by a gear system and will operate on low wind. A Newton's colour wheel is included. The air from a standard table fan (not included)

is enough to drive the generator to produce current for the motor or the lamp. A selection switch is provided for selection to either the motor or the lamp.

Cat. No. 42WPG \$180.00

## ARE YOU GETTING TECHEMAIL?

*If you are not receiving the Delta Science 'Techemail' you could be missing out!*

*Techemail keeps you up to date on new products, specials, promotions, clearance sales and the like. These are available only to subscribers, so if you are not receiving Delta's Techemail, just send an email to [science@deltaed.co.nz](mailto:science@deltaed.co.nz)*

*with the words*

**SUBSCRIBE TECHEMAIL**

*and we shall add that address to our mail list. Similarly, you may send*

**'UNSUBSCRIBE'**

*to be removed from the list anytime.*

## Notes

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# SAFETY



## BOTTLE CARRIER

PVC coated wire,

DOUBLE Cat. No. 48BCD **\$36.00**

SINGLE Cat. No.48BCS **\$32.00**

**NEW**  
Product



44CC100



44CF100

## CABINETS

### METAL CORROSIVES AND FLAMMABLES CABINETS

It is essential that flammables and corrosives are stored safely. They can not only cause injury to people and damage to property if stored unsafely, but accidents due to corrosives can result in expensive repairs and even liability charges. We offer a range of Storage Cabinets that can safely store up to 350 litres for both Flammables and Corrosives.

All sizes of Safety Storage cabinets include these features:

EPA & HSNO compliant, Manufactured to AS1940 standards, Correct signage, Double skin, Continuous hinge, Sizes to store up to 350 Litres, Robust door closures, Key lock, Optional electronic access control, Earthquake security brackets, Grounding cable to stop static, Protection gloves, Adjustable shelves, PPE bunded shelves (Corrosives Cabinets only - for separation), Levelling feet, Ready to use/ no further assembly required, 150mm high bund (sump).

Cat. No	Description	Unit Price
44CC30	Corrosives Cabinet 30L, 770x515x460mm, 54kg	<b>\$1,390.00</b>
44CC60	Corrosives Cabinet 60L, 1065 x 515 x 460mm (HxWxD), 76kg	<b>\$1,495.00</b>
44CC100	Corrosives Cabinet 100L, 770 x 965 x 620mm (HxWxD), 119kg	<b>\$1,795.00</b>
44CC160	Corrosives Cabinet 160L, 1295 x 1100 x 460mm (HxWxD), 172kg	<b>\$1,975.00</b>
44CC250	Corrosives Cabinet 250L, 1825 x 1100 x 500mm (HxWxD), 237kg	<b>\$2,425.00</b>
44CC350	Corrosives Cabinet 350L, 1825 x 860x 860mm (HxWxD), 268kg	<b>\$3,460.00</b>
44CF30	Flammables Cabinet 30L, 770x515x460mm, 50kg	<b>\$1,198.00</b>
44CF60	Flammables Cabinet 60L, 1065x515x460mm, 70Kg	<b>\$1,298.00</b>
44CF100	Flammables Cabinet 100L, 770x965x620mm, 110Kg	<b>\$1,660.00</b>
44CF160	Flammables Cabinet 160L, 1295H x 1100W x 460Dmm, 160Kg	<b>\$1,815.00</b>
44CF250	Flammables Cabinet 250L, 1825H x 1100W x 500D (mm), 220kg	<b>\$2,180.00</b>
44CF350	Flammables Cabinet 350L, 1825H x 860W x 860D (mm), 245kg	<b>\$2,755.00</b>
<b>PRICE INCLUDES DELIVERY!</b>		

### CORROSIVES CABINETS - PVC

These affordable under-bench lockable cabinets for Class 8 corrosive materials are made of robust PVC which will not corrode. All models feature a self-latching door, door shelves, adjustable shelves in the cabinet and a liquid tight bund (recess) in the base; 140L model has 2 bunds. Two removable spill trays fit into each bund and are included. Designed to comply with or exceed the following standards: ASNZ 2243, AS3780 - Class 8, HSNO CoP 1-1 06-04 and HSNO CoP 15. The 44CF40 and 44CF70 have a single compartment. The 44CF140 has two separate compartments of 70 litres each to store Winchester and Euro bottles. Optional vents for vapour removal systems are available and can be positioned where convenient (to be installed by the school). All Hinges are the highest grade stainless steel available. All three models are available in an under bench version which is 770mm High.



Cat. No. 44CF70 **\$1,559.00**

under bench

Cat. No. 44CF70UB **\$1,559.00**



Cat. No. 44CF140 **\$2,069.00**

under bench

Cat. No. 44CF140UB **\$2,069.00**

Optional Vent, each (installed by school)

Cat. No. 44CFV **\$38.00**



For smaller Chemical Stores rooms where space is at a premium, the new CF40 fits under most benches or can even be wall mounted. Fits up to 3 Winchester bottles per shelf.

Cat. No. 44CF40 **\$1,340.00**

under bench Cat. No. 44CF40UB **\$1,340.00**

	CF40	CF 70	CF 140
Dimensions	W x D x H	W x D x H	W x D x H
External	530 x 380 x 820	530 x 550 x 770	1080 x 550 x 770
Internal	450 x 290 x 700	450 x 500 x 700	990 x 500 x 700
Shelves	2	2	2
Spillage Trays	1 pair	1 pair	2 pairs
Spillage Capacity	9 litres	18 litres	36 litres
Capacity	40 litres	70 litres	140 litres

## DG SIGNS

These large self-adhesive Dangerous Goods labels are ideal for clearly marking designated DG storage areas on doors, walls and cabinets.



Flammable Liquid 3

48DG3



Oxidising Substances 5.1

48DG51



Corrosive 8

48DG8

**NEW Product**

Cat. No.	Description	Each
48DG3	DG SELF-ADHESIVE LABEL FLAMMABLE LIQUID 3, 235 X 235mm	\$23.00
48DG41	DG SELF-ADHESIVE LABEL FLAMMABLE SOLID 4.1, 235 X 235mm	\$23.00
48DG43	DG SELF-ADHESIVE LABEL, DANGEROUS WHEN WET 4.3, 235 X 235mm	\$23.00
48DG51	DG SELF-ADHESIVE LABEL OXIDISING SUBSTANCES 5.1, 235 X 235mm	\$23.00
48DG61	DG SELF-ADHESIVE LABEL TOXIC 6.1, 235 X 235mm	\$23.00
48DG8	DG SELF-ADHESIVE LABEL CORROSIVE 8, 235 X 235mm	\$23.00
48DGET	DG SELF-ADHESIVE LABEL ECO TOXIC, 235 X 235mm	\$23.00

## EYEWASH WALL STATION, Two Bottle

Wall Station with 2 x 1 litre eyewash bottles. Provides a total of 6 minutes wash time. Attachment screws included. Dimensions 39 x 20 x 10 cm.



- Contains sterile saline solution. Superior to refillable bottles that use tap water for emergency eye care.
- Nozzle design ensures a soft flow over the eye at a continuous rate. This is important to avoid damaging the injured eye.
- Eye support ring to facilitate prolonged washing.
- Bottles are tamper resistant and have a non-refillable design to guarantee sterility.

Cat. No. 44EWS **\$152.00**



### Eyewash Replacement Bottles

Replacement pack of 2 x 1 Litre bottles for eyewash station.

Cat. No. 44EWSR **\$91.50**

## Five bottle

Same as the Two Bottle version above but with a 5-Bottle Station to provide a total of 15 minutes sterile solution wash time, the minimum recommended for chemical eye injury. 39cm x 45cm x 10cm. Attachment screws included.



Cat. No. 44EWS5 **\$258.00**

## 5 Bottle Pack of Sterile Saline Replacement Bottles

Cat. No. 44EWSR5 **\$255.00**



## FACE SHIELD & BROW GUARD

Cat. No. 48FS **\$19.95**



## FIRE EXTINGUISHER

AB(E) Dry powder Extinguisher. Multi-purpose for fires on wood, paper, textiles, burning liquids and live electrical equipment.

1.0 kg Cat. No. 48FE **\$65.00**

Sign for Fire Extinguisher

Cat. No. 48FES **\$18.40**



## FIRE BLANKET

1.2 m x 1.8 m

Cat. No. 48FB **\$50.80**

## FIRST AID KIT

For class size of 1-25, durable plastic container with quick release wall mounted bracket, clear internal hinged cover to prevent contents spilling, contents meet or exceed Department of Labour guidelines.

Cat. No. 48FAK **\$176.00**

## ALCOHOL PREP WIPE

70% ISO, 6.5 X 5.6cm box/100 Sterile. Large swab size, sealed individually in a sterile sachet, impregnated with 70% alcohol, large swab size, cost effective. Active Ingredients: Isopropyl Alcohol 70%.



Cat. No. 48APW **\$3.00**

## STERILE WATER WIPES



12X18cm, Box/50, Sterile. Large wipe size, sealed individually in a sterile sachet, suitable for first aid kits, ideal for cleansing open wounds, cost effective. Active Ingredients: Distilled water.

Cat. No. 48SWW \$4.50

## SEAL-ON SPRAY POWDER



Seal-On is ideal for scrapes, grazes and scratches where there is a large surface area and visible bleeding. Also suitable for minor cuts and for sports injuries. Designed to stop bleeding from cuts, scrapes and surface wounds fast, the Spray mechanism allows you to apply m•doc™ directly to the wound. The solvents and propellant that are also present in the aerosol evaporates on spraying leaving the m•doc™ to act on the wound. It is applied as a fine, dry powder that on interacting with blood forms a soft, gel-like layer over the wound to stop bleeding fast. This product is safe for both children and adults.

Cat. No. 48SO \$15.70

## CLINICAL THERMOMETER DIGITAL

Digital Clinical Thermometer has the following automatic features: sound at the end of measurement, saves the last value, switch off enhances battery life, battery change indication displayed. Flexible tip, waterproof and re-usable. Latex Free. 32-42 +/-0.1 Deg C.



Cat. No. 44TDC \$6.00

## GLOVES

**VINYL** - Box of 100, Low Powder

Small	Cat. No. 44GVS	\$9.00
Medium	Cat. No. 44GVM	\$9.00
Large	Cat. No. 44GVL	\$9.00

**LATEX** - Box of 100, Low Powder

Small	Cat. No. 44GLS	\$9.30
Medium	Cat. No. 44GLM	\$9.30
Large	Cat. No. 44GLL	\$9.30

**NITRILE** – blue, box of 100, powder-free, disposable. Better chemical resistance than latex and stronger. Best choice for those sensitive to latex and powders.

Small	Cat. No. 44GNTS	\$15.90
Medium	Cat. No. 44GNMT	\$15.90
Large	Cat. No. 44GNL	\$15.90

## POLYETHYLENE - GENERAL USE (NON-CHEMICAL)

Box of 200, basic latex-free, powder-free, food-industry grade inexpensive glove. Good for dissections, cleaning, general non-chemical applications, etc. Available in Clear or Blue:

Small, Clear	Cat. No. 44GPCS	\$12.00
Med, Clear	Cat. No. 44GPCM	\$12.00
Large, Clear	Cat. No. 44GPCL	\$12.00
X- Large, Clear	Cat. No. 44GPCX	\$12.00
Small, Blue	Cat. No. 44GPBS	\$12.00
Med, Blue	Cat. No. 44GPBM	\$12.00
Large, Blue	Cat. No. 44GPBL	\$12.00
X- Large, Blue	Cat. No. 44GPBX	\$12.00

## GLOVE BOX DISPENSERS

Wall-mounted dispenser available in one-box or three-box versions. Allows handy access to boxes of disposable gloves.



Single Box

Cat. No. 44GDS \$28.80



Triple Box

Cat. No. 44GDT \$40.35

## GLOVES FOR COLD

Super Flex PVC Insulated Glove with Knit Cuff, Large. A low-temperature-resistant PVC formulation keeps recyclable Super Flex soft and supple even in cold conditions, while providing excellent abrasion resistance and protection from a broad range of chemicals. Its cotton jersey liner enhances worker comfort and glove flexibility. Suitable for brief handling of dry ice and cold objects.



Cat. No. 44GPVC \$30.00

## SAFETY DATA SHEET (MSDS) HOLDERS

These convenient storage products will be appreciated in any lab where MSDS sheets may need to be used. Hard wall-mounted heavy duty moulded red holder.

Cat. No. 48SDSR \$99.95

MSDS A4 ring binder, yellow

Cat. No. 48SDSY \$99.95

MSDS wall-mounted grey holder

Cat. No. 48SDSG \$116.60



48SDSR



48SDSY



48SDSG

## NEOPRENE

Multipurpose Chemical Resistant  
(Acids & Aliphatic solvents)



Size S	Cat. No. 44GNS	\$6.50
Size M	Cat. No. 44GNM	\$6.50
Size L	Cat. No. 44GNL	\$6.50

## NITRILE GLOVES, HEAVY

Heavy-duty safety gloves for protection from Chemicals, acids, oils and detergents.

Medium, Size 9	Cat. No. 44GNIM	\$6.50
Large, Size 10	Cat. No. 44GNIL	\$6.50

## RESPIRATOR



Protection from fumes, twin cartridge.  
(Cartridges not included)

Cat. No. 48RTC \$32.00

### Respirator Replacement Cartridges

Chemical Acid Gases, Organic and Inorganic Vapours. Pk/2.

Cat. No. 48RTCC6 \$49.90



Organic Gases, Dusts and Mists. Pk/2.

Cat. No. 48RTCC7 \$48.50

**Note - Use two of the same type in respirator.  
DO NOT mix different cartridges in respirator.**

## SAFETY GLASSES



### STANDARD TYPE

Clear, polycarbonate with side and top shields for maximum protection. Ventilated sidearms to reduce fogging.

Cat. No. 44SG \$5.60  
24+ \$5.20



### FUNKY SPEC

Polycarbonate lens safety glasses. Wrap-around frame, one size fits all.

Clear	Cat. No. 44SGF	\$7.50
	24+	\$7.00
Daylight Blue Tint	Cat. No. 44SGFB	\$7.70
	24+	\$7.25



### MINISPEC

For small heads and children. Fashionable design. Arms adjustable to 5 positions.

Cat. No. 44SGS \$12.50  
24+ \$11.65

## SAFETY GLASSES STORAGE

### Gratnells

The Gratnells F2 tray with x20 safety glasses insert makes reconciliation easy at a glance! Trays available in 4 colours (R,B,G,Y; choose code accordingly). 44GFIS holds 4x5 rows of safety glasses. The optional 01LF1 lid secures the contents and keeps the lenses free of dust.



F2 Tray, deep, 150mm Cat. No. 01F2R(B/G/Y) \$12.00

Foam Safety Glasses Insert

Cat. No. 44GFISG \$12.95

Lid

Cat. No. 01LF1 \$6.00

(For other great Gratnell Storage ideas see TROLLEYS, GRATNELLS in the General Laboratory Section.)

## SAFETY GOGGLES



Protection from chemical splash and fine dust. Lens clear, form fitting with elastic. Indirect ventilation. CE certified.

Cat. No. 44SG2 \$3.95

## SAFETY SHIELD, Perspex

This solid safety shield is very stable on the bench at 4.5kg and made of 5mm perspex. The large central viewing section is 600 x 460mm H x W. The side viewing panels are 600 x 300mm, fastened to the central panel with steel strap hinges for adjustment and provide fastening points for the removable cast-iron, epoxy-coated feet. Folds neatly away for storage.



Cat. No. 44SS \$180.00

## SPILL KITS

Both kits include:

- x 20 Absorbant Pads (41 x 51cm)
- x 3 Socks (7.6cm x 1.2m)
- x 1 Gloves
- x 1 Goggles
- x 1 Instructions

**General Purpose:** For small spills (up to 30 litres) of most liquids including oils, solvents, coolants, and mild chemicals.

Cat. No. 48SKG \$214.00



**Chemical:** For small spills (up to 30 litres) of hazardous and aggressive liquids.

Cat. No. 48SKC \$216.00

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**Listen to what Lisa Clay of Rototuna Senior High School has to say about the Gratnells installation at their new school:**

Rototuna Senior High School  
Gratnells Science Storage System:

As a brand new school with a modern learning environment, we had only our technician room for the majority of our storage needs. So when our Specialist Curriculum Leader was looking into shelving, he spoke to Derek at Delta who then highly recommended the Gratnells Science & Technology Storage System.

The system is proving to be great for storing all of our equipment and being able to put the tray and shelf heights where you need them is a real bonus. We went for the cyan blue, lime, and purple trays to colour-code the curriculum areas thus making it easier for the teachers to find their equipment.

We also invested in a Gratnells trolley to store and transport our microscopes. We just have to wheel the trolley out for use and with adjustable shelves we have made a smaller shelf to store other equipment in a Gratnells tray containing microscope slides, coverslips and stains.

