# AMERICAN SCIENTIFIC LLC 2020 WHOLESALE CATALOG



### **2020 WHOLESALE CATALOG**

American Scientific, LLC is delighted to present our 2020 wholesale catalog! Up-to-date pricing and other information is accessible on our website after account registration. We have selected items for this catalog based on our customers demands and will continue to develop the best products and services possible.

We have access to a large range of products not listed in this catalog, as well as the ability to manufacture custom products and packaging solutions. Contact our AmSci Support at sales@ american-scientific.com for more information.

AmSci is a leading innovator, manufacturer and wholesale distributor of hands-on scientific educational products, kits, gifts, and toys for two decades. We provide thousands of products to hundreds of resellers around the globe, and our customers include some of the largest educational suppliers in the industry.

Most of our products come with Teacher's Guides, Student Handouts and/or Product Demonstration Videos that have been created by our staff in partnership with local education experts, to promote and foster education.

Along with our supplemental materials, we are also able to provide custom product packaging and branding services. We are truly a 'one-stop-shop' for all scientific educational projects!



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#### **M** AMSCI EXCLUSIVE

Products that have been manufactured, developed, or sourced in-house that meet science and NGSS standards, sold exclusively by American Scientific.

#### **TEACHER'S GUIDE**

Our team works with educational professionals to develop supplemental materials for classroom education. This icon identifies products that include a Teacher's Guide.

#### VIDEO ONLINE

American Scientific develops supplemental Experiment and Product Demonstrations videos, with the help of science educators, that expound on available products.

WE ACCEPT CREDIT CARDS!













### SUBTRACTIVE COLOR THEORY DEMONSTRATION ♠ ♠ □ ITEM 3559-20

The Subtractive Color Theory Demonstration can be used to promote memory retention, encourage logical thinking, and teach the optics and physics of color mixing. As you are challenged to create specific color designs on the back-lit board, you must predict how colors of the filter tiles will mix either by experimentation or previous understanding - then you must strategically slide the squares into the correct configurations. This Color Theory Demonstration has a game-like quality and is elegantly simple. It makes exploring and experimenting with color mixing accessible (and fun!) for curious minds of all ages. Teachers: Use the puzzle as a way to introduce the phenomena of subtractive color mixing to students in a classroom and explore color theory even more deeply through the games and related activities in the included guide.

#### Includes:

- Detachable Power Adapter
- 2 Sets of 18 Color Filters
- · Activity Guide



### CHEMISTRY KIT, 16 PIECE **→** □ ITEM 8820-00

The 16-piece Chemistry Kit was specifically designed with safety and fun in mind and is perfect for elementary classrooms, home school science lessons, and young science enthusiasts. The kit and included activity guide encourage exploration of multiple chemistry and physics concepts, including density, chemical reactions, heat transfer, molecular bonds, capillary action, and more. Suggested experiments require little more than common household items, such as sugar, water, or food coloring. All kit materials are washable and reusable.



### MICRO:BOT **(\*) (\*)** ■ ITEM 8830-00

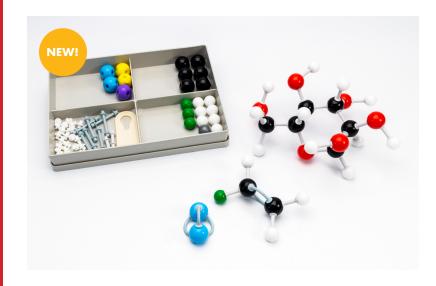
Coding has never been simpler and more fun than with the Micro:bot. Compatible with BBC micro:bit, the Micro:bot, is a small programmable robot great for learning coding and robotics using Block code and Javascript. The American Scientific exclusive educational Activity Guide makes learning easier by providing step-by-step coding activities that take advantage of all the Micro:bot capabilities.

#### Set includes:

- Micro:bot
- BBC micro:bit
- Ultrasonic distance sensor
- Remote control

#### Specifications:

• 10 x 15 x 23 cm (4" x 6" x 9")



### CHEMISTRY MOLECULAR STUDENT SET ITEM 1540-20

Visualize complex molecular structures with the 3D molecular module set. This set is designed for beginners to advanced science students/learners. Build 3D models to help understand bonds, ring structures, and much more!

#### Set Contents:

- 22 Hydrogen Atoms
- 14 Carbon Atoms
- 6 Oxygen Atoms
- 4 Nitrogen Atoms
- 2 Sulfur Atoms
- 4 Halogen Atoms
- 1 Phosphorus Atom1 Metal Atom
- 28 Small

- Connectors
- 30 Medium
- Connectors
- 12 Long Connectors
- 1 Molecular Tool
- 1 Storage Box



### MINI RIPPLE TANK ⊕ □ ITEM 3338-01

This apparatus uses modern technology to completely update the Ripple Tank concept. It provides a compact and elegant method of showing the wave phenomena of diffraction, refraction, reflection, and interference, with none of the usual problems. The tank is 4" (100 mm) square and is supported on a base which provides the wave generator and lighting. The white light source can be switched between constant illumination and strobe to give either moving or frozen images on the screen. In the strobe mode, the light source is synchronized to the wave generator so that perfectly static patterns are displayed. The wave frequency can be varied, giving wavelengths in the tank ranging from several cm to a few mm.

#### Specifications:

- 4" (100 mm) square
- 3 Acrylic shapes for refraction
- 3 Aluminum plates for reflection
- 3 Dippers for plane and circular
- Full instructions



#### ELECTROPHORESIS TANKS 🍎 🖾

Made of durable acrylic, this one-piece molded design makes the electrophoresis tank safe and easy to use. Run up to 2 samples at the same time. Uses platinum electrodes for excellent conductivity. Connect to power source using 2 red/black female banana plugs.

#### Includes:

- Teacher's Guide and Student Handout included
- Two 100 mm x 75 mm (4" x 3.5") casting trays
- Two 15 mm (0.6") tooth combs
- 4 plastic end caps

8101-00 Electrophoresis Tank, Acrylic

8102-00 Electrophoresis Tank, Economy, Acrylic

8102-09 Electrophoresis Tank, Economy, 9v

**8144-00** Electrophoresis Power Source



### VIBRATION DEMONSTRATION KIT ₩ □ ITEM 8410-005

This Sine Wave Generator and Wave Driver can be used together. As a kit, they form the Vibration Demonstration Kit, which shows sine waves as they travel across a medium. Chladni plates provide an illustration of the modes of vibration of solids.

#### Kit Includes:

- Wave Driver (Item 8420-00)
- Wave Generator (Item 8410-00 110V, Item 8415-00 110v-220v)
- Chladni Plates Kit (Item 8430-04)
- Banana Plugs
- Wave Driver Accessories Kit (8430-01-10, see below)
- Sand & Sand Shakers (Item 8430-07)
- Allen Key & Holder (8430-01-10, see below)

#### Sine Wave Generator:

- Power supply 1 A max.
- 110 V
- 60 Hz

#### Wave Driver:

- Power: 1 A
- 3.91" Dia. x 3.03" H







### HOLDERS AND ALLEN KEY ITEM 8430-06

Use these holders to attach accessories like.

### A. LONGITUDINAL WAVE SPRING KIT ITEM 8430-01

Connect the spring to see longitudinal waves in action!

### B. RESONANCE WIRE LOOP KIT ITEM 8430-02

Use it to illustrate the patterns of standing waves.

### C. LONGITUDINAL WAVE CORD KIT ITEM 8430-03

Use the elastic cord to see longitudinal waves in action!

### D. METAL RESONANCE STRIPS ITEM 8430-05

Illustrates the principles of resonant modes. Since they are different lengths, the strips will noticeably oscillate at different frequencies.



### HOT PLATE, DIGITAL TEM 6200-00

This product is an electric, glass-top hot plate. Users can increase or decrease the heat by 3.3°C (6°F) with each button click up or down. After turning off the unit, the screen displays "HOT" until it has cooled sufficiently. For use in science classrooms, laboratories, and homes.

- On/off switch
- Child lock
- +/- Controls
- Max 350°C (660°F)
- Min 60°C (140°F)
- 200mm (8") L x 250 mm (10") W x 75 mm (3") H
- 125 mm (5") D heating element
- 900 mm (36") cord
- 110 V



#### HOT PLATE, ANALOG ITEM 6200-01

This Analog Hot Plate can be used as an heating element in chemistry, physics, and biology laboratories and classrooms.



### WATER CYCLE SIMULATOR ITEM 6650-00

This model can be used to duplicate the individual processes of the water cycle (evaporation, condensation, and precipitation).

#### Includes

- Ten transparent 8.5" x 11" Fullcolor study prints
- Activity Guide



### WATER ELECTROLYSIS ITEM 3154-00

This apparatus is used to make Hydrogen and Oxygen gas from water. Consists of a plastic container with mounted carbon electrodes.

#### Includes:

- 2 Alligator clips (1 Red, 1 Black)
- 2 Test tubes
- Instruction manual



### BROWNLEE ELECTROLYSIS APPARATUS ITEM 3154-10

This apparatus is used to make Hydrogen and Oxygen gas from water. Consists of nonconducting support equipped with binding posts connected to 2 insulated platinum electrodes, 2 inverted 6" test tubes.



#### DC MOTOR KIT

These kits allow students to build their own DC motor from scratch! Includes instructions manual. Requires 1 AA battery (not included).

**3167-10** Spring Type Binding Posts Each **3167-11** With Battery Holder Each



### COLOR FILTERS, 5/PK ITEM 3559-25

These packs of color filters are ideal for light experiments. Colors include, red, yellow, orange, blue, and green.



### COLLISION IN ONE DIMENSION ITEM 7411-30

This device is used to demonstrate Newton's Third Law of Motion.



### **ELECTROSTATIC DEMONSTRATION KIT ITEM 2120-15**

Demonstrate multiple electrostatic principles including: electrophorus, charging electroscopes by induction and contact, electrostatic attraction, repulsion and induction, Faraday's ice pail experiment, and surface distribution of the charge.

#### Kit includes:

- Faraday Cage with Cover
- Aluminum Can
- 2 Electroscopes (with spare foils)
- 2 Electroscope Ball Terminals
- 2 Electroscope Disc Terminals
- 2 Electrophorus (with insulating handle)
- Acrylic Sheet
- Charge Transfer Ball
- Neon Bulb
- Insulated Point
- · 3 Pairs of Electrostatic Cork Balls
- · Acetate Cloth
- · Polyethylene Friction Rod
- PVC Friction Rod
- Acrylic Friction Rod
- Glass Friction Rod
- Nylon Friction Rod
- Polystyrene Friction Rod
- Instruction Manual



### UV BEADS, PK/1000, MULTI COLORED → ITEM ASB-1000

These solar beads change from white to colorful when exposed to a UV light source; the more UV light, the brighter they become. Learn about UV rays and where they come from. These beads are useful for science and health as well as arts and crafts (make cool bracelets, or necklaces, glue them to make mosaics... the possibilities are endless).

- · Comes with Student Handout
- Multicolored



#### **RUBBERIZED APRON**

Made of chemically resistant rubberized material.

Flexible and lightweight, ties at waist.

ITEM #	SIZE	MEASUREMENTS	
8835-00	Small	36" x 27"	Each
8835-10	Medium	27" x 42"	Each
8835-20	Large	42" x 36"	Each
8835-30	X-Large	46" x 36"	Each



### LUNG VOLUME BAG SET ITEM 3646-15

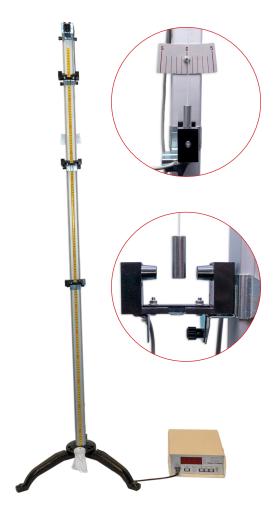
This set is great for determining maximum lung volume. Students exhale fully into a bag, then squeeze the expired gas into the bottom of the bag. Bag marked in 100-ml increments up to 6 L. Set includes 4 heavy-gauge plastic reusable bags with mouthpiece holders and 30 disposable mouthpieces. Lung Volume Bag only available, Item 3646-15.



#### PAN, ALUMINUM, DISSECTING

Polished aluminum with rolled edges and rounded corners. Rustproof and corrosion-resistant. Some available with wax.

1090-00	<b>With Wax,</b> 11.25 x 7.5"x 1.5"	Each
1091-01	Without Wax, $11.25 \times 7.5 \times 1.5$ "	Each
1091-02	<b>With Wax,</b> 13.125 x 9.375 x 2.25"	Each
1091-03	Without Wax, 13.125 x 9.375 x 2.25"	Each
1091-04	<b>With Wax,</b> 15.75 x 9.75 x 2"	Each
1091-05	Without Wax, 15.75 x 9.75 x 2"	Each



### FREE FALL AND PENDULUM SET WITH TIMER ITEM 3550-60

Measure free-fall acceleration with this set. The timer starts when the electromagnet releases a steel ball and records as the ball passes through 3 photogates. Determine the period of a pendulum as it passes through a single photogate.



### MAGNETIC LINEAR ACCELERATOR ITEM 3564-10

The device includes powerful rare-earth magnets, steel ball bearings, a 22cm (8.5'') long firing trough, and all the hardware needed to build your own magnetic accelerator.



LENSES, ACRYLIC BI-CONVEX 90X15MM ITEM 3352-01

Acrylic bi-convex lens. Bottom surface is frosted.



### LENSES, ACRYLIC BI-CONCAVE ITEM 3352-02

Acrylic bi-concave lens. Bottom surface is frosted.



### STREAM TABLE ITEM 6600-00

This portable unit is outstanding for demonstrating stream erosion and deposition of soils either in the classroom or outside. Setting up this demonstration is a breeze! Order sand separately.

• 42.25" L x 14.75" W

#### Kit includes:

- Plastic tray
- Drain trough
- · Tray support stand
- Siphon tube









#### HEAT PACKS (\*) D

Snapping the metal disc creates a chain reaction, causing the solution of water and sodium acetate to crystallize. The crystallization process gives off heat. The heat packs can be recharged back to the liquid state by boiling in water.

· Teacher's Guide included

**3227-02** 4 x 4 in **3227-03** 8 x 8 in



#### PH PAPER TEST STRIPS, 1-14, BOOK, PK/100 ITEM 2092-10

These pH test strips can be used to measure acidity or alkalinity of chemical solutions are perfect for introductory chemistry lessons related to acids and bases.

- Includes a color code key to determine pH from 1-14.
- 100 test trips per book



#### PH PAPER TEST STRIPS, 1-14, VIAL IN BLISTER PACK, PK/100 ITEM 2092-10B

These pH test strips can be used to measure acidity or alkalinity of chemical solutions are perfect for introductory chemistry lessons related to acids and bases.

- Includes a color code key to determine pH from 1-14.
- 100 test trips per vial



### LITMUS PAPER, BLUE, PK/100 ITEM 2091-01

These easy-to-use blue litmus paper test strips turn red when dipped into acidic solutions and are perfect for introductory chemistry lessons related to acids and bases.

100 strips per vial



#### LITMUS PAPER, RED, PK/100 ITEM 2091-02

These easy-to-use red litmus paper test strips turn blue when dipped into alkaline/basic solutions and are perfect for introductory chemistry lessons related to acids and bases.

100 strips per vial



#### **AMSCI FAVORITE**

### MAGNESIUM RIBBON ITEM 2074-01

Use this Magnesium Ribbon for combustion experiments and to demonstrate the principles of chemical changes.

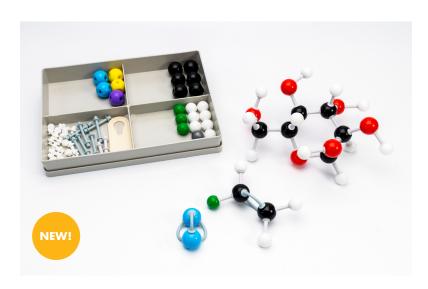
- Sold in a pack of approx. 31 g
- Flammable solid
- 0.03 mm (0.0012 in) thick





### CHEMISTRY KIT, 16 PIECE → □ ITEM 8820-00

The Sixteen Piece Starter Chemistry Kit was specifically designed with safety and fun in mind and is perfect for elementary classrooms, home school science lessons, and young science enthusiasts. The kit and included activity guide encourage exploration of multiple chemistry and physics concepts, including density, chemical reactions, heat transfer, molecular bonds, capillary action, and more. Suggested experiments require little more than common household items, such as sugar, water, or food coloring. All kit materials are washable and reusable.



### CHEMISTRY MOLECULAR STUDENT SET ITEM 1540-20

This molecular model set can be used to visualize a variety of molecules and molecular reactions. The hands-on modeling makes chemistry more approachable for students.

#### Set Contents:

- 22 Hydrogen Atoms
- 14 Carbon Atoms
- 6 Oxygen Atoms
- 4 Nitrogen Atoms
- 2 Sulfur Atoms
- 4 Halogen Atoms
- 1 Phosphorus Atom1 Metal Atom
- 28 Small Connectors
- 30 Medium Connectors
- 12 Long Connectors
- 1 Molecular Tool
  - 1 Storage Box



# PASCAL'S PRINCIPLE DEMONSTRATOR (PRESSURE SYRINGE EQUAL TRANSMISSION OF FLUID PRESSURE APPARATUS) \*\* • TITLE \*\* TITLE \*\*

This apparatus can be used to demonstrate Pascal's Law that liquid pressure is transmitted equally in all directions. Fill it with water, push the piston, and watch the water squirt out every hole equally.

- Borosilicate glass bulb: 50 mm (2") Dia. with holes
- Total Unit: Approx. 250 mm (10") H



# CAPILLARY TUBE SET, COMMUNICATING CAPILLARIES, GLASS TIEM 3447-00

This set consists of 4 glass capillary tubes of different inner diameters rising up from a larger tube reservoir. Use this set-up to demonstrate and help students draw conclusions about capillary action.

- · Comes mounted on stand
- Tubes approx. 150 mm (6") H



#### HOFFMAN ELECTROLYSIS APPARATUS KIT 🍎

The Hoffman electrolysis apparatus applies electrical currents to liquids and can be used to hydrolyze water, introduce gas laws, demonstrate stoichiometry, and show the effects of electricity on liquids.

- 50 ml side tubes graduated in 0.2 ml increments
- Packed in a styrofoam case
- · Includes cast iron stand
- Requires 6 V battery or low voltage DC power supply, not included

3155-01 Hoffman Electrolysis Apparatus Kit3156-01 New Hoffman Electrolysis Apparatus Kit

#### HOFFMAN ELECTROLYSIS REPLACEMENT PARTS

Glass assembly replacement parts for use with Hoffman Electrolysis Apparatus.

- 50 ml side tubes graduated in 0.2 ml increments
- Includes 2 carbon electrodes, 2 platinum electrodes, rubber stoppers, and glass tubes

3155-02 Replacement Glass Only, For The Hoffman Electrolysis3156-02 New Hoffman Electrolysis Apparatus, Glass and 4 Electrodes Only

#### **HOFFMAN ELECTROLYSIS SUPPORT PARTS**

Replacement parts for use with Hoffman Electrolysis Apparatus. Heavy metal support has binding posts in the base and double clamps on the rod; a special clamp with prongs for supporting the lower part of the apparatus is also supplied. The stand will hold the apparatus securely without straining or damaging the glass apparatus.

**3155-03** Metal Support Stand Only, For The Hoffman Electrolysis **3156-03** Base, Rod, 2 Clamps Only, For New Hoffman Electrolysis Apparatus



# PLATINUM ELECTRODE, FOR THE HOFFMAN ELECTROLYSIS, PAIR ITEM 3155-04

These platinum electrodes were designed as replacement parts for the Hoffman Electrolysis Apparatus.

 Includes platinum electrodes and lead wires, glass tubes and stoppers



# CARBON ELECTRODE, FOR THE HOFFMAN ELECTROLYSIS, PAIR ITEM 3155-05

These carbon electrodes were designed as replacement parts for the Hoffman Electrolysis Apparatus.

 Includes carbon electrodes and insulated lead wires and stoppers



### HEAT CONDUCTOMETER TITEM 3223-00

Use the conductometer for demonstrating and testing heat conductivity in a variety of metals. Set includes five metal rods (aluminum, brass, iron, copper, and stainless steel) radially fitted on a brass disk. Excellent for lessons introducing the qualities of different elements as well as thermodynamics lessons.

- Teacher's Guide included
- Metal bars: 75 mm L x 5 mm Dia. (3" L x 0.19" Dia.)
- Brass disk: 27 mm (1") Dia.



### WATER ELECTROLYSIS ITEM 3154-00

This apparatus is used to make Hydrogen and Oxygen gas from water. Consists of a plastic container with mounted carbon electrodes.

#### Includes:

- 2 Alligator clips (1 Red, 1 Black)
- 2 Test tubes
- · Instruction manual



#### BROWNLEE ELECTROLYSIS APPARATUS ITEM 3154-10

This apparatus is used to make Hydrogen and Oxygen gas from water. Consists of nonconducting support equipped with binding posts connected to 2 insulated platinum electrodes, 2 inverted 6" test tubes.



#### BOYLE'S LAW APPARATUS ITEM 3548-11

This apparatus can be used to illustrate Boyle's Law, demonstrating the relationship between pressure and volume.

**3548-01** Boyle's Law Apparatus Each **3548-02** Replacement Syringe Each



### METER, CONDUCTIVITY TESTER, 10 LEVELS ITEM 3224-02

This conductivity meter can be used to compare the conductivity of different solutions and solids. Touch the probes to the object or dip into a solution, press the button, and observe the results on an LED screen. The meter measures conductivity on a scale from 1 (low) to 10 (high). The conductivity tester be used in lessons on electricity or for comparing the properties of different elements.

- Stainless steel probes: 14 cm L x 1.75 cm thick (5-1-2" L x 11/16" thick)
- Batteries included



#### METER, CONDUCTIVITY TESTER, 6 LEVELS ITEM 3224-01

This meter can be used to compare the conductivity of different solutions and solids. Touch the probes to the object or dip into a solution, press the button, and observe the results on an LED screen. The meter measures conductivity on a scale from 1 (low) to 6 (high). The conductivity tester be used in lessons on electricity or for comparing the properties of different elements.

- Stainless steel probes: 825 mm L x 16 mm thick (3-1/4" x 1/16" thick)
- Total length with probes: 17.8 cm (7")
- Requires two AA batteries (not included)



# OPEN MANOMETER, REPLACEMENT MANOMETER AND PINCHCOCK ITEM 3542-00

This manometer is used to accurately measures gas pressure and can be used in lessons about fluid mechanics as well as gas pressure.

- Borosilicate
- 50 cm (19.7") arm
- Funnel top
- 26 cm (10.25") arm with riffle

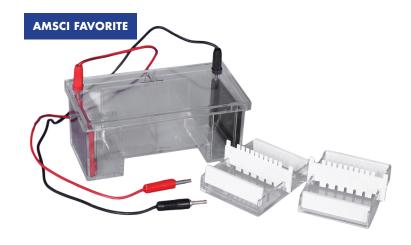


# OPEN MANOMETER, REPLACEMENT TUBE, BOROSILICATE GLASS ITEM 3542-11

Use this replacement tube with the Open Manometer.

- Borosilicate
- 50 cm (19.7") arm
- Funnel top





#### ELECTROPHORESIS TANKS, ACRYLIC 🍎 🖾

Made of durable acrylic, this one-piece molded design makes the electrophoresis tank safe and easy to use. Run up to 2 samples at the same time. Uses platinum electrodes for excellent conductivity. Connect to power source using 2 red/black female banana plugs.

#### Includes:

- · Teacher's Guide and Student Handout included
- Two 100 mm x 75 mm (4" x 3.5") casting trays
- Two 15 mm (0.6") tooth combs
- 4 plastic end caps

**8101-00** Electrophoresis Tank, Acrylic

8102-00 Electrophoresis Tank, Economy, Acrylic

**8144-00** Electrophoresis Power Source



### ELECTROPHORESIS TANK, ECONOMY, 9V ● □ ITEM 8102-09

Made of durable acrylic, this one-piece molded design makes the electrophoresis tank safe and easy to use. Run up to 2 samples at the same time. Uses platinum electrodes for excellent conductivity. Connect to power source using 2 red/black female banana plugs.

• Tank size: 15 cm x 9 cm x 5 cm (6" x 3.5" x 2")

Electrical Specification: 9V

#### Includes:

- Teacher's Guide and reproducible student handout
- Two (2) 76 mm L x 64 mm (3" x 2.5") casting trays
- Two (2) 15 mm (0.6") tooth combs
- 4 plastic end caps





# DISSECTING FORCEPS, ECONOMY, STAINLESS STEEL, 115 MM (4 1/2") ITEM 1060-00

These economical Dissecting Forceps made of stainless steel with pointed tips and a serrated handle. The forceps are ideal for biology and life science labs.

115 mm (4.5") L



### DISSECTION FORCEPS, PLASTIC, FINE TIP, 12 PACK ITEM 1055-06

These straight, economy, fine-tip Dissection Forceps are made of durable plastic with blocks that keep the tips from crossing over. For use in biology/dissection labs.

- Pack of 12
- 125 mm (5") L



# FORCEPS, STRAIGHT, FINE TIP, STAINLESS STEEL, 115 MM (4 1/2") ITEM 1059-01

These tweezers are designed for accurate dissection work. Made of stainless steel, with serrated tips and corrugated sides, they are designed for durability and precision.

115 mm (4.5") L



### DISSECTION FORCEPS, PLASTIC, BLUNT TIP ITEM 1055-55

These straight, economy, medium-tip Dissection Forceps are made of durable plastic with blocks that keep the tips from crossing over. The forceps are useful for biology/dissection labs as well as for honing fine motor movements and sorting activities in preschool and elementary classrooms.

• 125 mm (5") L



### FORCEPS, BLUNT TIP, STAINLESS STEEL, LARGE, 250 MM ITEM 1065-00

Made from stainless steel, with serrated sides and tips, these forceps are built for durability and ease of use. With a extra long length of 250 mm, they offer precision for reaching and removing large objects from deep containers.

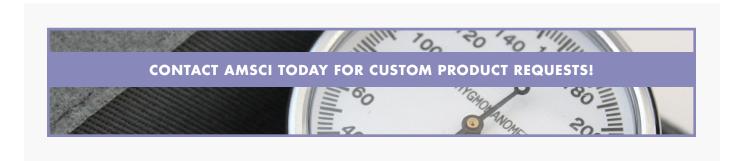
• 10" (250 mm) L



#### PROBE & SEEKER, SMALL ITEM 1083-01

This seeker is an angular and blunt (tapered) probe with a hexagonal handle. It has a one-piece construction and is made from stainless steel for durability in dissection labs.

130 mm (5.1") L





### SCISSORS, DISSECTING, STRAIGHT, 125 MM (5") ITEM 1070-01

These scissors are made of stainless steel and have one blunt end and one sharp blade end. They are ideal for easily cutting through connective tissue and muscle for dissection labs.

125 mm (5") L



# SCISSORS, DISSECTING, STRAIGHT, SHARP/SHARP, 115 MM (4.5") ITEM 1072-03

These Dissecting Scissors are made with a closed shank, 2 sharp points, and straight blades. These scissors are designed for durability and easy cutting.

- Made of nickel-plated steel
- 115 mm (4.5") L



# IRIS SCISSORS, DISSECTING, STAINLESS STEEL, STRAIGHT, 115 MM (4.5") ITEM 1072-01

These iris scissors are made of stainless steel with two sharp point blade tips. Designed for use in ophthalmic procedures, these scissors offer sharp precision for fine dissection work in biology labs.

• 115 mm (4.5") L



#### **TEASING NEEDLES WITH HANDLE**

These straight stainless steel needles are mounted in plastic handles. The needles are perfect for use in dissection, as they allow precision and a firm grip.

1081-02	Bent, Metal	Each
1082-01	Bent, Stainless Steel, Plastic Handle	12/pk
1082-02	Straight, Stainless Steel, Plastic Handle	12/pk



### SCALPEL, FIXED HANDLE, STAINLESS STEEL ITEM 1076-03

This one-piece scalpel is made of stainless steel and offers long-lasting durability for use in dissection labs.



#### PAN, ALUMINUM, DISSECTING

Polished aluminum with rolled edges and rounded corners. Rustproof and corrosion-resistant.

1090-00	With Wax, 11.25 x 7.5"x 1.5"	Each
1091-01	Without Wax, $11.25 \times 7.5 \times 1.5$ "	Each
1091-02	With Wax, 13.125 x 9.375 x 2.25"	Each
1091-03	Without Wax, 13.125 x 9.375 x 2.25"	Each
1091-04	With Wax, 15.75 x 9.75 x 2"	Each
1091-05	Without Wax, 15.75 x 9.75 x 2"	Each



#### **GRIFFIN BEAKER, GRADUATED, PLASTIC**

This beaker is a single piece, molded out of translucent plastic, with raised numerical graduations and a pouring spout. It is resistant to most common acids, bases, and solvents. The beaker has a broad base for stability.

- Does not have meniscus
- Autoclavable to 130°C

2205-00	25 ml	12/pk
2205-01	50 ml	12/pk
2205-02	100 ml	12/pk
2205-03	250 ml	6/pk
2205-04	500 ml	4/pk
2205-05	1000 ml	3/pk
2205-06	2000 ml	Each



#### **GRIFFIN BEAKER WITH HANDLE, GRADUATED, PLASTIC**

This beaker is a single piece, molded of translucent plastic, with raised graduations in liters and milliliters and a pouring spout. It is resistant to most common acids, bases, and solvents. The beaker has a flat, stable base for added stability.

2207-01	500 ml	24/pk
2207-02	1000 ml	6/pk
2207-03	2000 ml	6/pk



### GRADUATED, BOROSILICATE GLASS BEAKER

This standard glass beaker can be used for routine mixing, measuring, and boiling in biology and chemistry labs.

Micro-wave safe

**5719-03** 50 ml Each **5719-04** 100 ml Each



# GRIFFIN BEAKER SET, GRADUATED, PLASTIC, 30 ML - 1000 ML, 8/SET 199 ITEM 2206-00

This set of 8 polypropylene beakers is great for classroom use. It is a space saver as the beakers can be nested inside one another for storage. The beakers have pouring spouts and are made from sturdy, translucent plastic, which is resistant to most bases, acids and other solvents.

- Does not have meniscus
- Autoclavable up to 100°C.
- Includes 1 beaker in each of the following sizes: 30 ml, 50 ml, 100 ml, 150 ml, 250 ml, 400 ml, 600 ml, and 1000 ml



#### BEAKER, GRADUATED, BOROSILICATE GLASS

These graduated beakers can be used for routine mixing, measuring, and boiling in the laboratory.

- Microwave-safe
- Borosilicate glass

5713-04	100 ml	12/pk
5 <i>7</i> 13-07	250 ml	12/pk
5 <i>7</i> 13-08	400 ml	8/pk
5713-09	500 ml	8/pk



### GRIFFIN BEAKER WITH HANDLE, GRADUATED, PLASTIC

This beaker is a single piece, molded of translucent plastic, with raised graduations in liters and milliliters and a pouring spout. It is resistant to most common acids, bases, and solvents. The beaker has a flat, stable base for added stability.

**5719-11** 1000 ml Each **5719-12** 2000 ml Each



### CAFFEINE MUG WITH HANDLE 400ML ITEM 5717-06C

One side of this beaker mug, enameled in white, is a caffeine molecule! The attached handle stays cool when holding hot liquids and this heat-resistant borosilicate glass is also microwave-safe.

- Borosilicate Glass
- · Capacity: 400 ml



#### **ERLENMEYER FLASK, WIDE NECK WITH HANDLE**

The handle on this Erlenmeyer flask offers ease and safety in the laboratory and classroom. These borosilicate glass flasks are heat-resistant and microwave-safe.

- Borosilicate glass
- Heat resistant
- Microwave-safe

**5717-01** 125 ml Each **5717-02** 250 ml Each



#### BEAKER MUG WITH HANDLE

The handle makes an ordinary beaker incredibly easy to use. These borosilicate, heat-resistant beakers have standard graduations, and are microwave-safe!

- Borosilicate Glass
- Graduated

**5721-00** 600 ml Each **5721-02** 400 ml Each **5721-04** 500 ml Each



### FLASK, ERLENMEYER, NARROW NECK, BOROSILICATE GLASS

This narrow-necked Erlenmeyer flask can be used in chemistry and biology labs for spill-free swirling, titrations, growing microbial cultures and multiple other procedures.

**5714-01** 25 ml Each **5714-02** 50 ml Each



### FLASK, ERLENMEYER, WIDE NECK, CONICAL, GRADUATED, BOROSILICATE GLASS

This wide-necked Erlenmeyer flask can be used in chemistry and biology labs for spill-free swirling, titrations, growing microbial cultures and multiple other procedures.

5714-2125 mlEach5714-2250 mlEach5714-25500 mlEach5714-261000 mlEach



### FLASK, ERLENMEYER, NARROW NECK, CONICAL, GRADUATED, BOROSILICATE GLASS

This narrow-necked Erlenmeyer flask can be used in chemistry and biology labs for spill-free swirling, titrations, growing microbial cultures and multiple other procedures.

**5714-03** 125 ml Each **5714-04** 250 ml Each **5714-05** 500 ml Each **5714-06** 1000 ml Each



#### MEASURING CYLINDER, GRADUATED, PLASTIC

The measuring cylinders are a single piece, molded out of translucent plastic, with raised numerical graduations and a pouring spout. It is resistant to most common acids, bases, and solvents. The cylinder has a broad hexagonal base for stability.

- Does not have meniscus
- Autoclavable to 130°C

2203-01	10 ml	24/pk
2203-02	25 ml	24/pk
2203-03	50 ml	12/pk
2203-04	100 ml	12/pk
2203-05	250 ml	12/pk
2203-06	500 ml	4/pk
2203-07	1000 ml	6/pk
2203-08	2000 ml	4/pk



### FLASK, VOLUMETRIC, WITH GLASS STOPPER, BOROSILICATE GLASS

This laboratory glass flask is made of borosilicate and is calibrated to its precise volume. This flask is ideal for precise dilutions and preparations of standard solutions.

5910-00	50 ml	Each
5910-10	100 ml	Each
5910-11	1000 ml	Each
5910-25	250 ml	Each
5910-30	25 ml	Each
5910-50	500 ml	Each





This spherical flask can be used in a variety of glass set-ups. The round shape evenly distributes stress and heat across its surface and makes it more fracture-resistant.

5732-08	14/20 Joint, 100 ml	Each
5732-09	19/22 Joint, 100 ml	Each
5732-12	19/22 Joint, 250 ml	Each
5732-16	24/40 Joint, 500 ml	Each
5732-19	24/40 Joint, 1000 ml	Fach



# MEASURING CYLINDER SET, GRADUATED, PLASTIC, 10 ML-1,000 ML, 7/SET ITEM 2203-10

The measuring cylinders are a single piece, molded out of translucent plastic, with raised numerical graduations and a pouring spout. It is resistant to most common acids, bases, and solvents. The cylinder has a broad hexagonal base for stability.

- Set of 7 includes one of each: 10 ml, 25 ml, 50 ml, 100 ml, 250 ml, 500 ml, 1000 ml
- Does not have meniscus
- Autoclavable to 130°C



### MEASURING CYLINDERS, METRIC SCALE, BOROSILICATE GLASS

Use these measuring cylinders in general laboratory procedures. They have round bases, spouts, and break-resistant collars.

5565-03	10 ml	Each
5565-05	25 ml	Each
5565-07	50 ml	Each



### FILTERING FLASK, W/ SIDE ARM, BOROSILICATE GLASS

This flask is used for receiving a filtering liquid and is made of heavy-walled glass. Its side tube can be connected to a suction pump.

5 <i>7</i> 16-01	250 ml	Each
5716-02	500 ml	Each



### FLASK, PEAR SHAPE, SINGLE NECK, BOROSILICATE GLASS

This pear-shaped flask are intended for evaporating solutions until dry after synthesis.

5726-00	25 ml 14/20 Socket	Each
5726-01	50 ml 19/22 Socket	Each



### DISTILLATION APPARATUS, COMPLETE SET, BOROSILICATE GLASS (\*)

This glass distillation apparatus can be used for batch production of distilled water, manufacture of perfumes, concentrating acids, phenol, fractional distillation, determination of boiling point, etc. The set is packaged in custom cut-out soft foam block packaging and a sturdy box to keep it safe during delivery and storage.

Complete borosilicate glass/hardware set includes:

- Round bottom flask
- Graham type coil condenser with Stop Joint
- Receiving flask
- 2 clamps
- Chemical-resistant, cake enamel finish, cast iron base 200 mm x 125mm (8" x 5") with a plated steel rod that can be unscrewed from the base for storage

**5540-20** 500 ml Each **5540-21** 1500 ml Each



#### CONDENSER, LIEBIG TYPE, BOROSILICATE GLASS

This general purpose condenser is for distillations and extractions. The condenser has a sealed inner tube and is suitably tooled for leak-proof functioning.

5543-20	200 mm	Each
5543-30	300 mm	Each
5543-40	400 mm	Each
5543-50	500 mm	Each
5543-60	600 mm	Each
5543-90	300 mm 24/40 Joint	Each



#### CONDENSERS, GRAHAM COIL TYPE, BOROSILICATE GLASS

This condenser is primarily used for distillation requiring high surface area per unit length. It is comprised of a leak-free jacket sealed to the inner tube, which is coiled throughout. The inlet ends on these condensers are sloped to avoid trapping condensation.

5544-30	300 mm 24/40 Joint	Each
5544-40	400 mm 24/40 Joint	Each
5544-60	600 mm 24/40 Joint	Each



### DISTILLATION ADAPTER, BENT 105 DEGREES, BOROSILICATE GLASS

This adapter has inner joints at both ends.

**5720-02** Joint 14/20, 100x100mm Each **5720-04** Joint 19/22, 104x104mm Each



### ALLIHN CONDENSER, FULL LENGTH AND JOINT, BOROSILICATE GLASS

This Allihn condenser, with an insulated tube inside of a water jacket, can be used for distillation, reflux operations and extractions in chemistry labs. It allows for heating liquid, while avoiding complete evaporation to a dry container.

5722-02	300 mm 24/40 Joint	Each
5722-03	400 mm 24/40 Joint	Each
5723-00	235 mm 24/40 Joint	Each
5723-01	190 mm 35/45 Joint	Each
5723-02	260 mm 45/50 Joint	Each
5723-03	300 mm 55/50 Joint	Each



#### STOPPER, BOROSILICATE GLASS

This stopper is made with ground glass and a hexagonal head for easy removal. For use in a wide variety of glass apparatuses.

5734-01	19/22 Cone	Each
5734-02	14/20 Cone	Each
5734-03	24/40 Cone	Fach



#### CONNECTING TUBE, SIDEARM TYPE RECOVERY HEAD, BOROSILICATE GLASS, 19/22 ITEM 5532-01

This connecting tube can be used in distillation and other glass set ups in chemistry and biology laboratories.

Joint angle: 75°



### CONDENSER ADAPTER, BENT, BOROSILICATE GLASS

This condenser adapter is used in a distillation set up and designed to cool and condense vapors.

Borosilicate glassJoint angle: 105°

Delivery end outer Diameter: 10 mm

 5530-02
 150 mm
 Each

 5530-04
 180 mm
 Each

 5530-06
 200 mm
 Each

 5530-08
 180mm 24/40 Joint
 Each



### STILL HEAD WITH THERMOMETER SOCKET, BOROSILICATE GLASS

This still head is used in distillation assemblies for connecting flasks to a condenser. The upper socket is designed to accept a thermometer either via cone/screw thread adapter or thermometer pocket.

Socket size: 14/20

**5727-00** 14/20 Cone For Flask, Each 14/20 Cone For Conductor

**5727-01** 19/22 Cone For Flask, Each 19/22 Cone For Conductor



#### DISTILLATION ADAPTER, BENT 75 DEGREES, BOROSILICATE GLASS

For use with distillation glassware, this adapter has inner joints at both ends.

• Joint Angle: 105°

**5720-00** Joint 14/20, 50x55mm Each **5720-01** Joint 19/22, 50x55mm Each **5720-03** Joint 24/40, 130x140mm Each **5720-05** Joint 29/42, 130x140mm Each



#### CONNECTING TUBE, DISTILLATION, BENT, BOROSILICATE GLASS ITEM 5536-01

This bent glass connecting tube can be used as a connector in a distillation set up, as well as in other glassware set-ups in the chemistry and biology lab.

• Joint: 19/22



#### CONNECTING TUBE, CLAISEN TYPE, BOROSILICATE GLASS, 19/22 ITEM 5534-01

This Claisen connecting tube serves as an adapter to merge two parallel tubes and can be used as part of the glassware set up for a number of organic chemistry laboratory procedures. Ground glass joints allow pieces to be assembled, leak-free, without stoppers.

Borosilicate Glass

• Joint: 19/22



#### CONNECTING TUBE, DISTILLATION, STRAIGHT, BOROSILICATE GLASS ITEM 5536-11

This straight glass connecting tube can be used as a connector in a distillation set-up, as well as in other glassware set-ups in the chemistry and biology lab.



# REPLACEMENT DISTILLATION GLASS FLASK, BOROSILICATE GLASS 199

This is a replacement glass distillation flask only for the complete distillation set.

**5540-30** 500 ml Each **5540-31** 1500 ml Each



### DISTILLING FLASK, WITH SIDE ARM, BOROSILICATE GLASS

This flask can be used for all types of distillation work.

 Side Arm Placement: 77 mm below top of neck

• Side Arm Angle: 75°

**5718-00** 50 ml Each **5718-01** 125 ml Each **5718-02** 250 ml Each **5718-03** 500 ml Each



# DRYING TUBES 150 MM X 20 MM, BOROSILICATE GLASS ITEM 5504-04

This glass tube has tooled ends for stoppers and can be used for drying gases with desiccants such as granular calcium chloride, magnesium perchlorate etc.



### SEPARATORY FUNNELS, PEAR SHAPE, BOROSILICATE GLASS

This pear-shaped funnel is used to separate layers of immiscible liquids or for dropping liquids. It has a glass stopcock and is made of borosilicate glass. The funnel has an interchangeable glass stopper with a plain stem.

5550-06	60 ml	Each
5550-12	125 ml	Each
5550-25	250 ml	Each
5550-35	PTFE 500 ml	Each
5550-50	500 ml	Each



### SEPARATORY FUNNELS, GLOBE SHAPE, BOROSILICATE GLASS

This glass separatory funnel is for use in liquid-liquid extractions. It allows users to separate (partition) the components of a mixture into two immiscible solvent phases of different densities.

5551-06	60 ml	Each
5551-12	125 ml	Each
5551-25	250 ml	Each



#### RETORT, 250 ML ITEM 5507-53

This transparent Retort can be used in the chemistry lab to distill (wet or dry) substances.





### EXTRACTOR OF SOXHLET APPARATUS, BOROSILICATE GLASS

This extractor is designed with an outer top joint and inner bottom joint to serve as part of a Soxhlet Apparatus for the continuous extraction of lipids and other compounds from a solid into a suitable solvent.

5725-00	34/35 Top Joint, 24/40 Bottom Joint	Each
5725-01	45/50 Top Joint, 24/40 Bottom Joint	Each
5725-02	55/50 Top Joint, 24/40 Bottom Joint	Each
5725-03	71/60 Top Joint, 29/42 Bottom Joint	Each
5725-04	103/60 Top Joint, 29/42 Bottom Joint	Each



### FLASK, SOXHLET, FLAT BOTTOM, BOROSILICATE GLASS

This flat-bottomed, round flask is designed with an outer top joint to fit a Soxhlet Apparatus for the continuous extraction of lipids and other compounds.

5724-02	300 ml	Each
5724-03	1000 ml	Fach



#### CENTRIFUGE TUBES, CONICAL BOTTOM, GRADUATED 15 ML, BOROSILICATE GLASS ITEM 5525-15

These centrifuge tubes have a conical bottom and can be used for chemistry lab steps requiring centrifugation to separate particles within a solution.

• Temperature Range: Up to 27 C (80.6 F)

Graduated: 0.20 mlVolume: 15 ml



# THIELE MELTING POINT TUBES, 25 X 165 MM, BOROSILICATE GLASS ITEM 5571-20

Use this tube to determine substances' melting points. The arm allows convection currents to form during heating. Putting in a small sample of a substance and a thermometer allows the melting point to be determined in a simple experiment.

- 25 mm (1") outer Dia. x 165 mm (6.5") L
- 100 mm (3.9") W at widest point of arm



The thistle tube can serve as a funnel for adding a small amount of liquid with precision and agility.

- Made of borosilicate glass
- Approx. dimensions: 177 mm (7") L, top dia. 18 mm (0.7"), outer stem dia. 5 mm (0.2")





#### **WATCH GLASSES**

This circular Watch Glass is made of heavy walled plate glass with fired edges. It can be used in chemistry labs and classrooms as a surface to evaporate liquid, to hold solids while being weighed, as a cover for a beaker, or for heating a small amount of substance.

**2086-03** 75mm Dia. 12/pk **2086-05** 100 mm Dia. 12/pk



### REDUCTION ADAPTER, BOROSILICATE GLASS

This glass adapter is designed to connect different standard taper ground joint sizes. The upper, outer/socket joint is smaller than the lower inner/cone joint.

**5729-01** 14/20 Socket, 19/22 Each

**5729-02** 19/22 Socket, 24/40 Each Cone

**5729-03** 19/22 Socket, 19/22 & Each 24/40 Cone



#### STEAM TRAP (WATER TRAP), BOROSILICATE GLASS ITEM 3219-00

Used in glassware set-ups to discharge condensates and non-condensible gases.



### U-SHAPED DRYING TUBES, BOROSILICATE GLASS

U-Shaped Drying Tubes can be used for drying gases with desiccants such as granular calcium chloride, magnesium perchlorate etc.

5554-12	100 x 13 mm	Each
5554-14	150 x 13 mm	Each
5554-22	Tube w/ Side Arm	Each



### TEST TUBE, WITH SIDE ARM, BOROSILICATE GLASS

Use this glass tubes for microfiltration and other applications.

5585-20	20 x 150 mm	Each
5585-25	25 x 203 mm	Each



#### **GAS MEASURING TUBE, BOROSILICATE GLASS**

This gas measuring tube is used for measuring gases and is closed at the zero end of the tube.

Graduated

**5593-05** 50 ml Each **5593-10** 100 ml Each



#### **BURETS, PTFE STOPCOCK, ACRYLIC**

This buret has a clear acrylic body and leak-proof stopcock with a self-lubricating PTFE stop. It is individually calibrated for maximum accuracy.

- · Graduated at 0.1 ml
- Resistant to dilute acids and bases within pH range of 1-14
- Not for use with hydrofluoric acid or ammonium hydroxide

**5515-02** 25 ml Each **5515-05** 50 ml Each **5515-10** 100 ml Each



#### **BURET, MOHR TYPE, BOROSILICATE GLASS**

This borosilicate glass Mohr Buret is a volumetric tool used in chemistry and biology labs for drop-by-drop titrations. Simple to repair and replace its individual parts, this buret is an economical and practical choice for educational purposes.

- Tooled tip fits 16 mm inner Dia. flexible rubber tubing
- Calibrated at 20°C as per tolerances
- Buret includes pinch cock, rubber tubing, and glass jet.

 5505-02
 25 ml
 Each

 5505-05
 50 ml
 Each

 5505-10
 100 ml
 Each



PINCH COCK ATTACHMENT ITEM 5506-00



### BURET, GEISSLER TYPE, STRAIGHT, PTFE STOPCOCK, BOROSILICATE GLASS

This borosilicate glass buret is a volumetric tool used in chemistry and biology labs for drop-by-drop titrations. It has a straight bore with a PTFE stopcock for exceptional accuracy and longevity.

Subdivision: 0.10 ml (0.20 ml 5513-10)
 Tolerance: +0.10 ml (+0.20 ml 5513-10)

**5513-02** 25 ml Each **5513-05** 50 ml Each **5513-10** 50 ml Each



### BURET, GEISSLER TYPE, STRAIGHT, GLASS STOPCOCK, BOROSILICATE GLASS

This borosilicate glass buret is a volumetric tool used in chemistry and biology labs for drop-by-drop titrations. It has a straight bore with a ground-in glass key stopcock for exceptional accuracy and longevity.

**5509-02** 25 ml Each **5509-05** 50 ml Each **5509-10** 100 ml Each



### BURET, SCREW TYPE, PTFE STOPCOCK, BOROSILICATE GLASS

This buret is a volumetric tool used in chemistry and biology labs for drop-by-drop titrations. This apparatus has a borosilicate glass body with a Rotaflow type PTFE stopcock. Its design ensures a leak proof seal, finer flow control, elimination of lubrication, and absence of plug seizure.

**5512-05** 50 ml Each **5512-10** 100 ml Each



#### PIPET FILLER, FAST-RELEASE

This pipet filler, or pipet pump, can be used with glass or plastic pipets and employs a rotating thumb wheel to draw-up and dispense precise amounts of liquid. The filler also features a rapid-release button for quick emptying.

 1085-66
 Small, 2 ml
 Each

 1085-77
 Medium, 10 ml
 Each

 1085-88
 Large, 25 ml
 Each





### PLASTIC STAINING JAR ITEM 2202-01

This jar is intended for use in preparing and staining microscope slides. It has 5 grooves to hold 10 standard 75 mm L  $\times$  25 mm (3"  $\times$  1") W slides back to back in erect position.

- Domed threaded screw cap
- Approx. 115 mm (4.5") H



#### WASH BOTTLE, WIDE MOUTH, LDPE, 500ML ITEM 7001-00

This translucent, one-piece squeeze bottle is easy to use and durable. It is perfect for use in chemistry laboratories for washing and rinsing glassware and other supplies.

Material: Low-Density Polyethylene

• Capacity: 500 ml (16.9 oz)



#### **DISPOSABLE GRADUATED PIPETTE**

These are one-piece, low-density polyethylene pipettes with suction bulbs and straight-tip graduated tubes. They are useful tools for measuring out small amounts of liquid in chemistry and biology labs.

1085-11	Polyethylene, 1 ml	500/pk
1085-33	Polyethylene, 3 ml	500/pk
1085-34	Polyethylene, 3 ml	100/pk
1085-55	Polyethylene, 5 ml	500/pk
1085-56	Polyethylene, 5 ml	100/pk
1085-60	Polyethylene, 7 ml	100/pk
1085-61	Polvethylene, 7 ml	500/pk



#### **FUNNEL, BUCHNER, PORCELAIN**

These Buchner funnels are made with an integral perforated plate and straight sides. The wide plate makes it ideal for filtering collecting larger amounts of solids than the narrower Hirsch funnels. It can be used to filter substrates, wash precipitates, and redissolve with chemicals that would destroy filter paper, such as strong acids or bases. It is an excellent addition to a chemistry or biology lab or classroom. Glazed inside and outside except for its rim.

5307-04	90 mm	Each
5307-08	150 mm	Each
5307-10	250 mm	Each
5307-12	275 mm	Each



#### **FUNNEL, HIRSCH, PORCELAIN**

These funnels with a integral, perforated plate can be used to filter substrates, wash precipitates, and redissolve with chemicals that would destroy filter paper, such as strong acids or bases. It is an excellent addition to a chemistry or biology lab or classroom.

**5306-05** 75 mm Each **5306-06** 100 mm Each



#### **EVAPORATING BASIN**

This basin is used for evaporating solutions and supernatant liquids in chemistry experiments. It has a spout for easy pouring. The bowl is glazed inside and outside except on its rim and it has a round bottom.

**5301-03** 75 mm (3") Each **5301-04** 85 mm (3.3") Each



### CRUCIBLE, WIDE FORM, PORCELAIN

These shallow, wide crucibles are intended for heating and melting solids at very high temperatures over a burner in the chemistry lab and can be used to determine constant weight, among other uses.

- Withstands temperatures up to 800°C (1470°F)
- Glazed inside and outside, except for the outside bottom surface
- · Comes with a lid

5302-02	10 ml	Each
5302-03	15 ml	Each
5302-06	30 ml	Each
5302-07	50 ml	Each



### CRUCIBLE, TALL FORM, PORCELAIN

These tall, thin crucibles are intended for heating and melting solids at very high temperatures over a burner in the chemistry lab and can be used to determine constant weight, among other uses.

- Withstands temperatures up to 800°C (1470°F)
- Glazed inside and outside, except for the outside bottom surface.
- · Comes with a lid

5303-01	10 ml	Each
5303-02	15 ml	Each
5303-03	18 ml	Each
5303-05	30 ml	Each
5303-06	50 ml	Each
5303-08	100 ml	Fach



#### **CRUCIBLE TRIANGLE, PORCELAIN**

Use this triangle for supporting crucibles and dishes when heating on gas burners, etc. They are made with pipe stems on galvanized iron wire triangles.

• Side: 50 mm (2") L

**5313-01** 50 mm Each **5313-02** 60 mm Each



#### MORTAR AND PESTLE SET, PORCELAIN

These mortar and pestles sets are ideal for grinding solids in the chemistry lab, classroom, or even the kitchen. The mortar has a pouring lip for convenience and a footed bottom for stability. The pestle is oversized for extra hand comfort. Mortar glazed outside and rough inside. Pestle glazed on handle and rough on the bottom, grinding surface.

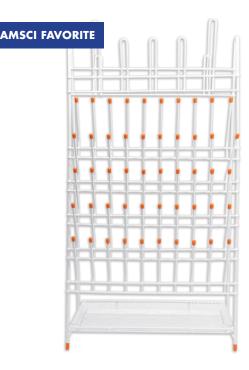
5308-01	60 mm	Each
5308-02	75 mm	Each
5308-03	100 mm	Each
5308-06	150 mm	Each
5308-07	175 mm	Each
5308-08	200 mm	Each



### TEST TUBE PEG RACK ITEM 2288-02

This test tube rack is made from a thick and sturdy plastic and holds about 50 test tubes. It offers a compact design for efficient storage.

 Dimensions: 185 mm (7.25") L x 100 mm (3.94") W x 70mm (2.75") H



### DRYING RACK, ECONOMY ITEM 2035-23

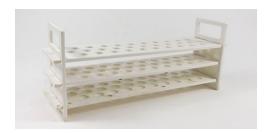
This economical drying rack is ideal for drying test tubes and other laboratory glassware.



# TEST TUBE RACK, 6 HOLES / 6 DRYING PINS, ABS POLYMER ITEM 2035-01

This test tube rack has 6 openings of 25 mm (1") Dia. on its top plate, with hemispherical wells and drying pins. It has an open side for clear viewing during chemistry and biology lab work.

- Material: Acrylonitrile butadiene styrene (ABS) polymer
- Dimensions: 240 mm x 70 mm x 90 mm (9.5" x 2.75" x 3.5")



### TEST TUBE RACK, 31 TUBES, POLYPROPYLENE ITEM 2035-13

This polypropylene rack holds up to 31 test tubes for use in Chemistry and Biology laboratories and classrooms.



### TEST TUBE RACK, UNIVERSAL MULTI RACK ITEM 2285-00

This Universal Multi Rack is made from a thick and sturdy plastic and holds 4 different test tube sizes. It offers a compact design for efficient storage.

Holds 4 Different Test Tube Sizes:

- (24) 15 mm (0.75") outer Dia.
- (8) 50 mm (1.19") Dia.
- (40) 12 mm (0.5") Dia.
- (20) 20mm (0.88") Dia.

#### Dimensions:

• 100mm x 95 mm x 115 mm (7.81" x 3.75" x 4.5")



# TEST TUBE RACK, 6 HOLES / 6 DRYING PINS, POLYETHYLENE ITEM 2035-02

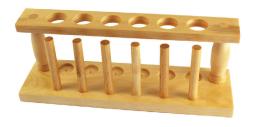
This economical test tube rack is a useful staple in chemistry and biology labs. It features two 25 mm (1") holes and four 22 mm (0.75") holes. It also includes six drying pins.

- Material: Polyethylene
- Dimensions: 240 mm × 75 mm × 90 mm (9.5" x 3" x 3.5")



### TEST TUBE RACK, 5 LARGE HOLES, PLASTIC ITEM 2035-30

This brightly colored blue and red plastic test tube rack can hold 5 large test tubes. It quickly assembles and disassembles for easy storage. The rack fits larger test tubes up to 30 mm (1.19'') Dia.



#### TEST TUBE RACK, 6 HOLES / 6 DRYING PINS, WOOD ITEM 2035-21

This Test Tube Rack is made of kiln-dried wood. It has 6 openings of 25 mm (1") Dia. and 6 drying pins.

- Economical
- Oil-finished
- Dimensions: 240 mm x 70 mm x 90 mm (9.5" x 2.75" x 3.5'')



#### TEST TUBE RACK, 20 HOLES, 3 TIERS, ABS POLYMER ITEM 2035-12

This economical test tube rack is ideal for laboratories and classrooms. The 20-tube rack fits test tubes up to 19 mm (0.75") Dia. The rack features convenient hand grips and a lower plate with rounded wells with drain holes.

- Material: Acrylonitrile butadiene styrene (ABS) polymer
- Dimensions: 325 mm L x 125 mm W x 70 mm (12.75" x 5" x 2.75")



#### TEST TUBE CLAMP, STODDARD WITHOUT FINGER GRIPS, ITEM 2031-01

Use this clamp for tubes from 10 mm to 19 mm outer Dia.



#### **TEST TUBE BRUSHES**

These brushes are designed to easily and effectively clean test tubes. They have nylon bristles and are fan-shaped at one end on a twisted, galvanized iron wire. The brushes are a useful tool for chemistry lab cleanup.

**2080-12** 9" Each 2080-13 12" Each



#### **TEST TUBE HOLDER, CROSS PATTERN** ITEM 2032-01

Use this cross-pattern holder for handling test tubes from 12 mm (0.5") to 40 mm (1.6") outer Dia. The holder has a polished wooden handle for convenience.

- Materials: rolled brass and wood
- Approx. 220 mm (8.7") L



## TEST TUBE CLAMP, STODDARD WITHOUT FINGER GRIPS,

ITEM 2030-02

This clamp is for use with test tubes from 6 mm (0.25") to 31 mm (1.25") in outer Dia. The clamp has self-closing jaws with finger grips.

Material: Plated spring steel wire Approx. 180 mm (7") L



#### TEST TUBE CLAMP, STODDARD, WITH FINGER GRIPS, 6" ITEM 2030-01

This clamp is for use with test tubes from 6 mm (0.25") to 31 mm (1.25") in outer Dia. The clamp has self-closing jaws.

- Material: Plated spring steel wire
- Approx. 160 mm (6") L



#### **TONGS, BEAKER**

These specialty tongs are designed to hold liquid-filled beakers from 50 ml to 600 ml capacity.

- Made of plated steel rod with plastic tubing covered jaws
- Finger grips are large enough for thumb and two fingers

2024-01 50 ml to 600 ml Each 2024-11 50 ml to 2000 ml Each



### MULTI-PURPOSE TEST SUPPORT 1878 ITEM 2052-00

This Multi-Purpose kit comes with a multitude of supports that can be used for many different experiments and lab exercises.

#### Kit includes:

- 2 Support stand bases
- 2 long support rods
- 1 short support rod
- 2 clamps that are approximately 200 mm (8")
- 1 support ring
- Screws
- Clamps



#### TONGS, CRUCIBLE

These tongs are designed for handling or manipulating hot crucibles and similar laboratory equipment.

Made of Plated Steel

 2020-01
 Steel- Plated, 6"
 Each

 2020-11
 Steel- Plated, 8"
 Each

 2020-33
 Stainless Steel, 18"
 Each



### TONGS, DISH, 250 MM ITEM 6455-22

These dish tongs are ideal for handling small dishes in the laboratory.



#### SUPPORT RINGS, CAST IRON

Use this ring with support rods, lattices, and more.

• Fits support rods up to 13 mm (0.5") Dia.

2038-022.5"Each2038-033"Each2038-044"Each



### SUPPORT PLATE WITH CLAMP, 127 MM ITEM 2040-00

This product consists of a flat, circular cast-iron plate with a plated thumbscrew.

- Rim inside Dia.: 127 mm (5")
- Can be clamped to rods up to 16 mm (0.6") Dia.



#### SUPPORT STAND, RECTANGULAR, WITH ROD, CAST-IRON BASE

This stand has a rugged base for stability. The plated steel rod can be unscrewed from the base for storage. The stand can be used as the support structure for numerous glassware apparatuses and set-ups for chemistry and biology laboratories. Supplied with a plated steel rod which can be easily screwed to the base.

- Chemical-resistant
- · Baked enamel finish

	BASE SIZE	ROD SIZE	
2050-01	150 x 100mm (6" x 4")	450mm (17.75")	Each
2050-02	200 x 127mm (8" x 5")	495mm (19.5")	Each
2050-03	225 x 150mm (9" x 6")	210mm (24")	Each
2050-04	300 x 150mm (12" x 6")	915mm (36")	Each



#### SUPPORT STAND, RECTANGULAR, WITH ROD, STEEL BASE

Consists of a base made from 3mm thick steel sheet with rubber feet for stability. The plated steel rod can be unscrewed from the base for storage. The stand can be used as the support structure for numerous glassware apparatuses and set-ups for chemistry and biology laboratories. Supplied with a plated steel rod which can be easily screwed to the base.

Painted

	BASE SIZE	ROD SIZE	
2051-01	150 x 100mm (6" x 4")	450mm (17.75")	Each
2051-02	200 x 127mm (8" x 5")	495mm (19.5")	Each
2051-03	225 x 150mm (9" x 6")	210mm (24")	Each
2051-04	300 x 150mm (12" x 6")	915mm (36")	Each





#### TRIPOD BASE WITH ROD, CAST IRON

These heavy cast iron base have three-point support for stability. They are drilled and threaded to accommodate a plated steel rod. For use as the support structure for numerous glassware apparatuses and set-ups for chemistry and biology laboratories.

• Base is finished with chemical-resistant enamel paint

**2054-01** 100mm (4") Each **2054-02** 150 mm (6") Each



### TRIPOD STAND, 3.5" ITEM 2057-02

This stand is for supporting various sizes of crucibles and apparatuses. It is designed to be stable and secure. The stand is a useful staple for chemistry labs and classrooms.

- Iron
- Black enameled ring and zinc-plated legs
- 230 mm (9") H
- Inner Dia., 45 mm (1.75"); ring outer Dia., 90mm (3.5")



#### TRIPOD STAND, SINGLE RING

This stand is for supporting small objects such as crucibles and evaporating dishes over a burner. It consists of a hammertone-finished cast iron circular ring, 4" (100 mm) Dia., with three threaded and detachable plated legs, which are sloped outward for stability. It is a secure and useful item for chemistry labs.

- Shipped unassembled
- Frequently used with our Wire Gauze with Ceramic Center (Items #2210-11, 2210-21, and 2210-13)

**2056-01** 6" Each **2056-02** 9" Each



### TRIPOD STAND WITH CONCENTRIC RINGS 5" ITEM 2057-01

This stand is for supporting various sizes of crucibles and apparatuses. It consists of a circular tripod stand with two removable concentric rings. The plated steel legs are detachable and sloped outwards for stability.

- · Shipped unassembled
- Black enamel finish
- Outer ring Dia.: 130 mm (5")
- 230 mm (9")



### CLAMP EXTENSION, FOUR PRONG ITEM 2062-01

For providing a firm grip on objects of diameter from 2mm to 90mm. Four pronged clamp of cast alloy with brass thumbscrew and cork lined jaws.

Overall length approximately 240mm.



### EXTENSION CLAMP, RUBBER COVERED JAWS ITEM 2062-02

Use this item for ensuring a firm grip on small round or irregularly shaped objects. This 3-pronged aluminum die-cast clamp features a brass thumbscrew. Its jaws are covered with replaceable rubber tubing, and open from 3mm (0.13") to 90 mm (3.5").

• Approx. 250 mm (10") L



### CLAMP, HOFFMAN, SCREW CLOSED ITEM 2054-02

This clamp is made of chrome-plated brass. Use this clamp to control flow in flexible tubing for a variety of scientific lab procedures.

- 25 mm (1") opening
- Chrome-plated brass



#### FLEXIBLE CLAMP ITEM 2062-03

This versatile and flexible clamp securely attaches to support stands, lab frames, and most support rods. The unique, flexible arm can be placed in virtually any position or angle. It is a convenient and useful tool for chemistry labs.

#### Features:

- 3-prong clamp head
- Nickel-plated flex arm
- · Cast-alloy lab frame connector



### UTILITY CLAMP ITEM 2062-06

The utility clamp opens up to 3 1/2" wide and uses 3-prongs to grip securely. Clamps prevent scratching because of vinyl-covering and can be locked in any position. Rotates 360 degrees.



### CLAMP, RIGHT ANGLE ITEM 2063-01

Use this clamp for connecting 2 rods at right angles, forming an L or T shape. It is made of die-cast alloy with plated brass thumbscrews. It can be mounted on rods up to 18 mm (0.75") Dia.



### CLAMP, BURET, SINGLE ITEM 2062-04

Use this clamp to connect glass buret pieces to support stands.

Die-cast



### CLAMP, BURET, DOUBLE ITEM 2062-16

Use this Double Buret Clamp to hold two burets side by side on the same stand.  $\,$ 

Die-cast



#### C-CLAMP, 4" ITEM 3554-03

Use these clamps for clamping 2 apparatuses together or securing an apparatus to a table top. They are also useful for setting up rod mounted pulleys. The clamps are useful for physics labs and classrooms.

- · Cast-iron enameled frame
- Plated screw and vise type nut
- Jaw opening 100 mm (4")

### NEED HELP FINDING THE RIGHT PRODUCTS?

CONTACT YOUR AMSCI REPRESENTATIVE



#### **AMSCI FAVORITE**

### LAMP, ALCOHOL BURNER, GLASS ITEM 2066-01

This burner is of molded soda glass with a tightly fitting, sealed brass cap.

Capacity: 125 ml (4 oz)



# TWO WAY BURNER STAND, WITH WIRE MESH, DUAL HEIGHTS ITEM 2065-00

This versatile stand is ideal for use with alcohol burners. The base is made stainless steel with a plated steel mesh top.



#### WIRE GAUZE, SQUARES, CERAMIC CENTER

Support and protect beakers or flasks during heating with our Wire Gauze Squares. The gauze is made of galvanized wire.

**2210-11** 100x100 mm (4"x4") Each **2210-12** 130x130 mm (5"x5") Each **2210-13** 150x150 mm (6"x6") Each



#### **WIRE GAUZE, SQUARES**

These wire gauze squares are useful for supporting and protecting beakers, flasks and other hot glassware.

**2210-01** 100x100 mm (4"x4") Each **2210-02** 130x130 mm (5"x5") Each **2210-03** 150x150 mm (6"x6") Each



### TECLU BURNER, FOR PROPANE GAS ITEM 2066-03

Use this burner for obtaining a very hot flame. It is suitable for glass work and soldering. The burner consists of a plated brass tube 13 mm (0.5") outer Dia. X 100 mm (4") H, with a threaded disc valve for adjustment of the air/gas mixture.



### BUNSEN BURNER, FOR PROPANE GAS ITEM 2066-02

This Bunsen Burner is built with a heavy base for stability. It has a brass mixing pipe 13 mm (0.5") Dia. and a 9mm (0.34") Dia. serrated gas inlet tube. It is a classic and useful implement for chemistry labs.



### BEAKER STAND, ADJUSTABLE FOR MICRO BURNER ITEM 2068-01

This beaker stand is specifically designed for use with our Micro Burner (Item #2068-00). It adds convenience and security to the use of the Micro Burner for heating beakers.



### PORTABLE MICRO BURNER ITEM 2068-00

This portable burner does not have wicks to replace or gas lines to install! A stable, tip-resistant design with an easy-grip handle provides safe use and portability anywhere in the lab or work area. The Micro Burner is refillable from a standard butane cartridge.

- For use with the Micro Burner Stand: Item #2068-01
- 1-2 hours use per fill
- CE Certified
- 40 g fuel capacity
- 125 mm (5") L x 90mm (3.5") H x 914 mm (3") D
- Weight: 388 gFuel Capacity: 41 g
- Maximum flame temp.: 900 degrees
  Can burn up to 60 minutes per filling



### ANGULAR ALCOHOL BURNER #9 ITEM 2066-11

This burner's angular shape allows it to be used while tilted at an angle. Alcohol can be poured in by removing the cap. The burner is a useful staple for chemistry labs and classrooms.

Glass with brass capCapacity: 125 ml (4 oz)

#### **ALCOHOL BURNER ACCESSORIES**

2066-12Replacement WickEach2066-13Metal CapEach2066-16Space Wick & HolderEach



#### **BURNER WING TOPS**

These burner wing tops are to be used with burners to produce a broad, flat, fan-shaped flame. Select the correct size by measuring the burner tube.

**2067-01** 11mm (7/16") Each **2067-04** 18mm (11/16") Each



### LAMP, SPIRIT, STAINLESS STEEL ITEM 5456-00 $\bullet$

This all-metal lamp is a leak-proof alcohol burner. It features a permanent wick. No replacements are needed. The lamp is a useful addition for chemistry classrooms and labs.

- Sufficient for 1.5 hours use
- Tank capacity 100 ml (3.4 oz)



### RUBBER GRIP, FOR HOT BEAKERS, SILICONE ITEM 2208-01

This Rubber Grip can be used to safely hold hot beakers. The grip makes moving hot liquids easy and safe. It is a necessity for keeping the user safe during chemical experiments and demonstrations. One size fits all.

• Temperature max: 250°F (120°C)



#### **CORK BORER SETS**

These cork borer sets are used to cut holes in a cork or rubber stopper to insert glass tubing. They are made of plated sharpened brass tubing, with attached handles. The set also includes a steel punch.

2093-01 Set of 3 Each2093-02 Set of 6 Each2093-04 Set of 11 Each



#### **CORK BORERS**

These cork borers are used to cut holes in a cork or rubber stopper to insert glass tubing. These nickel-plated brass handles and borer tubes will punch holes of various sizes. The steel punch is sold separately.

**2092-07** 7 mm (0.25") Each **2093-00** 15 mm (0.56") Each **2093-05** 5mm (3/16") Each



### CORK BORER SHARPENER ITEM 2095-00

For sharpening hollow cork borers from 5mm to 22mm (3/16" to 7/8") in diameter. Contains brass cone to fit the borer, with a hinged steel blade ground to sharpen the cutting end of the borer.

- Mounted in a wooden handle.
- Total length: 7-1/2" (190mm)



#### MAGNETIC STIRRER WITH HOT PLATE 49

These products are widely used for the simultaneous stirring and heating of liquids. Its totally enclosed, cast aluminum heating surface resists chemical spills. Stirring speed and temperature are regulated from the front panel with separate dials. Indicator lights inform users at a glance if either control is active. Each one is quality checked and backed by a 1-year warranty.

#### Includes:

- Detachable 300 mm (12") support bar with a clamp for thermometer or pH probe
- Detachable power cord measuring 1.5 m (5.5 ft) long
- Stirring capacity is up to 500 ml (16.9 oz) with a strong vortex
- 110 V-250 V
- 180 W
- Temperature max: 250°C (480°F)
- RPM 120-1600

SH-2	125 mm (5") x 125mm (5")	Each
SH-2-AUK	UK Adapter, 125 mm (5") x 125mm (5")	Each
SH-3	175 mm (7") x 175 mm (7")	Each
SH-3-AUK	UK Adapter, 175 mm (7") x 175 mm (7")	Each



### MAGNETIC STIRRER 199 ITEM SH-1

This Magnetic Stirrer is widely used for stirring a variety of liquids in laboratories and research institutes. Utilizes magnetic stirring rods. Each stirrer is quality checked and backed by a 1-year warranty.



#### HOT PLATE, ANALOG ITEM 6200-01

This analog compact single flat burner is great for classrooms, food labs and more. Burner has low, medium, high and warm temperature settings with a power-on safety indicator light. Die-cast, and compact for convenient storage.

• 9.5 in. W x 8.5 in. D x 3 in. H.



#### HOT PLATE, DIGITAL ITEM 6200-00

This product is an electric, glass-top hot plate. Users can increase or decrease the heat by 3.3°C (6°F) with each button click up or down. After turning off the unit, the screen displays "HOT" until it has cooled sufficiently. For use in science classrooms, laboratories, and homes.

- On/off switch
- Child lock
- +/- Controls
- Max 350°C (660°F)
- Min 60°C (140°F)
- 200mm (8") L x 250 mm (10") W x 75 mm (3") H
- 125 mm (5") D heating element
- 900 mm (36") cord
- 110 V



#### HEAT MANTLE ITEM 5541-00

This heat mantle is excellent for heating containers as an alternative to hot plates, and other forms of heated baths. Fluids are evenly heated while limiting the risk of glassware shattering.

#### Specifications:

- 1000 ml (34 oz)
- Voltage: 220 V / 50 Hz Max.
- Temperature: 0-380°C (32-716°F)
- Heating Power: 350 W
- Working Time: Working Condition 4 hours
- Environment Temperature: 50~ 40°C (122~104°F)
- Environment Relative Humidity: ≤ 90%;
- Voltage: 110v/220vFrequency: 50 ±1 Hz



### HOT PLATE, CERAMIC TOP ₩ ITEM SM-5

Designed for laboratory use, this is a variable heat control ceramic top heater. Heat is generated from resistant coils recessed into the ceramic top. This product also comes with a removable ceramic top plate specially designed for round bottom flasks.

- Effective temperatures are from ambient to 315°C (600°F)
- 500 Watts
- The open area in the removable ceramic top plate measures 95 mm (3.75") Dia.
- 150 mm (6") L x 150 mm (6") W

#### LAB COAT, RAINBOW TIE-DYE

This premium lab coat is pre-shrunk, 100% heavyweight cotton till made with extra durability in mind, hand-dyed rainbow tie-dye. The coat can be used in the lab, at school, or at home – it's even great as an art smock! It is knee-length with full sleeves, 2 roomy lower pockets, and side slit openings for easy access to pants pocket.

ITEM #	SIZE	LENGTH	CHEST	
8833-00	Small	88cm (34.5")	91cm (36")	Each
8833-10	Medium	97 cm (38")	102 cm (40")	Each
8833-20	Large	97 cm (38")	112 cm (44")	Each
8833-30	X-Large	107 cm (42")	127 cm (50")	Each
8833-40	XX-Large	109 cm (43")	132 com (52")	Each
8833-50	XXX-Large	110 cm (43.5")	135 cm (53")	Each





#### **RUBBERIZED APRON**

Made of chemically resistant rubberized material.

Flexible and lightweight, ties at waist.

ITEM #	SIZE	MEASUREMENTS	
8835-00	Small	36" x 27"	Each
8835-10	Medium	27" x 42"	Each
8835-20	Large	42" x 36"	Each
8835-30	X-Large	46" x 36"	Each



### DELUXE LAB TOOL KIT ITEM 8821-00

This kit comes with seven pieces.

Comes complete with:

- 6-hole test tube rack with brush & clamp
- Crucible tongs
- Lab scoop
- Spatula
- Forceps



#### SPOT PLATE, DISPOSABLE, 12 DEPRESSIONS, 15/PK ITEM 1123-00

These plastic spot plates contain 12 depressions and can be easily disposed of in the trash after use.



# SPOT TILE, 12 DEPRESSIONS, PLASTIC ITEM 2200-01

This tile can be used to hold small amounts of reagents for experiments. It is made of strong, white, unbreakable plastic and has 12 numbered depressions.



### SPRING EXTENSIONS, STEEL, 4" ITEM 3455-01

Use these Spring Extensions to demonstrate Hooke's Law and develop classroom discussions about physics.

- Made of 26 SWG wire
- Spring length: 100 mm (4")
- Net extension: 140 mm (5.5")



### PLUMB BOB

This Plumb Bob is made from a hexagonal steel rod by carefully machine turning to a sharpened point. Use it for determining center of gravity or for calibrating measuring devices.

- Includes a screwed end cap with a hole to receive a cord
- 140 g (5 oz)
- Approx. 85 mm

   (3.33") L x 20 mm
   (0.75") D



### SPRAY BOTTLE ITEM 9110-00

This small spray bottle is a useful tool in chemistry and biology labs. Use it to atomize and disperse minute amounts of liquid.

• Capacity: 10 ml (0.3 oz)



#### HOOK COLLARS 1/2" ITEM 3458-01

Use this collar for suspending spring balances, cords, pendulums and other apparatus from support rods or cross members. It is fitted with thumbscrews.

 Hook inner Dia. 13 mm (0.5")



# DISTILLATION APPARATUS, KIT, 250 ML/500 ML ITEM 5540-50

This distillation set can be used for batch production of high-purity water, manufacture of perfumes, concentrating acids, phenol, fractional distillation, determination of boiling point, etc.

- Complete set includes glass and hardware
- Round bottom, 250 ml (8.5 oz) borosilicate flask
- Round bottom, 500 ml (17 oz) borosilicate flask
- Chemical-resistant base with caked enamel finish
- Packaged in custom cut-out soft foam block packaging and a sturdy box to keep it safe during delivery and storage



# DISTILLATION APPARATUS, GLASSWARE, WITHOUT HARDWARE, 250 ML/500 ML ITEM 5540-51

This distillation set can be used for batch production of high-purity water, manufacture of perfumes, concentrating acids, phenol, fractional distillation, determination of boiling point, etc.

- Set includes glassware only
- Round bottom, 250 ml (8.5 oz) borosilicate flask
- Round bottom, 500 ml (17 oz) borosilicate flask
- Packaged in custom cut-out soft foam block packaging and a sturdy box to keep it safe during delivery and storage



# HANDLE ONLY FOR LABORATORY SCOOP ITEM #2084-01H

This wooden handle is for use with our Laboratory Scoop, item #2084-01.



# BOTTLE CONNECTOR ITEM 6455-55 ♥

This is a plastic connecting tube which, when connecting 2 bottles, demonstrates astounding tornado and vortex effects. It makes for a fun and exciting demonstration, and it is perfect for illustrating the vortex to younger children.

Assorted colors



#### LABORATORY SCOOP / SCOOPULA ITEM 2084-01

Use this tool for scooping out small or large amounts of chemicals from bottles and other containers. It has a semicircular cross section with one pointed end and one blunt end.

- Stainless steel
- Handle sold separately (Item #2084-01H)
- Length approx. 165 mm (6.5")



#### MICRO SPATULA ITEM 2084-14

This spatula is made of a stainless rod, which is pressed into thin, flat double blades at both ends. One end is a flat strip, 8 mm,  $(0.31") \times 60 \text{ mm}$  (2.38"), and the other has a rounded angle end, about 8 mm  $(0.31") \times 60 \text{ mm}$  (2.38"). It is a multi-purpose tool in any chemistry or biology lab.

• Approx. 200 mm (8") L



#### SPATULAS, SPOON/SPATULA DOUBLE ENDED 205MM ITEM 2084-09

One end is a flat spatula and the other bent into a spoon form.

- Stainless steel
- 205 mm (8") overall length
- Flat end: 34 mm x 71 mm (1.33" x 2.8") W



### SPATULA, NUFFIELD ITEM 2084-04

This spatula is an essential tool for laboratories. The spatula is pressed into a bent, flat end, a raised center section, and a 20mm (0.8") long scoop at the other end.

- · Stainless steel
- 140 mm x 7 mm (5.5" x 0.25") at middle strip



# SPATULA, PLASTIC, 8 IN ITEM 2084-99

This plastic spatula for use in chemistry and biology laboratories and classrooms.

• Length: 200mm (8")



#### **TUBING, RUBBER**

This high-grade, medium-wall rubber tubing is ideal for general laboratory use. It can be used to connect a Bunsen burner to a gas source, and is a versatile staple for classrooms and labs.

- Melting point 110°C (230°F)
- Available in rolls of 3 m (10 feet)
- 1.5 mm (0.06") wall thickness

6388-01	4.8 mm (3/16"), 10 Ft
6388-02	6.3 mm (1/4"), 10 Ft
6388-03	8 mm (0.31"), 10 Ft
6388-04	9.6 mm (0.38"), 10 Ft
6388-51	4.8 mm (0.19"), 50 Ft
6388-52	6.3 mm (0.25"), 50 Ft
6388-53	7.9 mm (0.31"), 50 Ft
6388-54	9.7 mm (0.38"), 50 Ft



#### FILTER PUMP ASPIRATOR

This aspirator is for vacuum filtration and other low-vacuum applications. With 9 mm serrated inlet nozzles, it is designed to prevent flooding and turbulence.

**2089-02** Brass Each **2089-03** Stainless Steel Each



#### FILE, TRIANGULAR, STEEL

These steel, triangular files are a helpful accessory for deburring, cutting glass tubing, and other laboratory uses.

**2088-04** 100 mm (4") L Each **2088-06** 150 mm (6") L Each



#### **QUALITATIVE FILTER PAPER**

This high-quality neutral Filter Paper is suitable for normal filtration. It contains a very low ash content.

 Qualitative Grade #1, medium speed

4 <b>7</b> 41-01	90 mm (3.5")	100/pk
4741-02	110 mm (4.33")	100/pk
4741-03	125 cm (5")	100/pk
4741-04	150 cm (6")	100/pk
4741-05	70 mm (2.75")	100/pk
4741-06	180 mm (7")	100/pk
4741-07	240 mm (9.5")	100/pk
4741-08	180 mm (7")	100/pk



#### FILTERING KIT ITEM 6100-00

This kit is perfect for filtering different types of liquids.

#### Kit includes:

- 500 ml filtering flask
- 80 mm porcelain Buchner funnel
- Hand vacuum pump with gauge
- 90-mm filter papers (100/pk)
- Rubber stopper
- Vacuum hose



#### HOLDER, SEPARATORY FUNNELS ITEM 2126-00

This is designed to hold separatory funnels for easier pouring. The holder has two interchangeable rod holders.

- Rod size: 13 mm (0.5") and 9 mm (0.35")
- Inner diameter: 70 mm (2.83")
- Dimensions: 150 mm (6") L x 100 mm (3.8") Dia.



#### **QUANTITATIVE FILTER PAPER**

This filter paper can be used in biology and chemistry labs to separate fine substances from the air or liquids. It allows for quantitative analysis of the precipitates.

4741-09	90 mm (3.5")	100/pk
4741-10	110 mm (4.33")	100/pk
4741-11	125 cm (5")	100/pk
4741-12	150 cm (6")	100/pk
4741-13	70 mm (2.75")	100/pk



# UNIVERSAL ADAPTER ITEM 3375-00

This universal adapter plugs into a traditional 3-prong outlet and provides access for plugs to connect, and adjust voltage and prong formation.

• The adapter also includes a surge protector.



#### PULLEY THREAD, GREEN, COTTON ITEM 6642-00

This durable, no-stretch cotton string is designed to be used with our pulleys.

• 25 m (82 ft) L x 1.5mm (0.06") thick

#### METER STICK, DUAL SCALE, WOOD

This high-quality, meter stick has permanently engraved black scales in Metric and US Standard Units. One side is graduated in centimeters in 1 mm increments. The reverse side is graduated with inches in 1/8" increments.

- 1 m (39.4") L
- 7 mm (0.3")

2192-97 Varnished hardwood Each2192-98 Mongolica wood with iron end-caps Each



### TALLY COUNTER ITEM 9456-20

This counter can be used to easily tally up large quantities.

#### Features:

- Maximum count: 9,999Instant reset knob
- · Chrome-plated metal case



### TIMER, DIGITAL ITEM 9456-30

This stopwatch/timer has 3 easy-to-use large, red buttons: LAP, ON/RESET, and START/STOP.

#### Features:

- Magnetic pinch clip on back for clipping to or affixing in place
- Wire "kick-stand" for tabletop applications
- Battery pull tab protection protects the battery until the timer is ready for use
- Captures elapsed time to within 0.01 sec and lap time
- Powered by one 357 A button battery (Included)
- Lanyard included



### STOPWATCH, DIGITAL, WITH LANYARD MITEM 9456-05

This stopwatch is useful for all sport and technical applications. It is designed for easy handheld use.

#### Features include:

- 0.01 sec stopwatch
- Split/lap time
- Hour/minute/second display as well as day/ month
- Easy three button controls
- Battery has pull tab to preserve battery life and is replaceable
- Includes battery and lanyard



#### MEASURING TAPE, RETRACTABLE, METAL, 3 M (10') ITEM 8777-30

This retractable metal measuring tape rolls up into a sturdy, plastic housing.



#### MEASURING TAPE, RETRACTABLE, METRIC/ ENGLISH

This metric/English retractable measuring tape is designed to meet the rigors of the classroom or the home. The tape locks and holds into position and automatically retracts at the touch of a button.

 Materials: Impact-resistant plastic housing; fiberglass tape

**3967-00** 150 cm (60") Each **3968-00** 3 m (10') Each



# MEASURING TAPE, 150CM (60"), 10/PK ITEM 3966-00

This flexible measuring tape measures metric on one side and English inches on the other. It is useful for measuring the length and distance around/circumference of objects. It is an excellent tool for use in the physics classroom, sewing room, and home.

Reinforced plastic

Length: 150 cm (60")



#### WEIGHING PAPER, GLASSINE, 6"X 6", 500/ PK ITEM 6115-00

This paper is used for weighing powders and other substances in the chemistry lab. It is air, water, and grease resistant for ease of use with a wide variety of substances.





# WEIGHT SET, SLOTTED, DELUXE, WITH HANGER, BRASS, 8/SET ITEM 3410-08

These polished brass masses are slotted and supplied on a metal rack with a 50 g brass hanger. They are compact and designed for easy storage.

- Includes total of 8 weights: one each of 10 g, 50 g, 100 g, 500 g, and two each of 20 g, 200 g
- Hanger (50 g)also sold separately (Item #3410-50)

3412-04	10 g	Each
3412-05	20 g	Each
3412-06	50 g	Each
3412-07	100 g	Each
3412-08	200 g	Each
3412-09	500 g	Each



#### **SLOTTED MASS, REPLACEMENT**

This slotted mass can be used with a variety of hangers, including Items #3406-10, #3406-11, #3410-50, and #3411-50. They made of brass and have a standard slot.

3412-01	1 g	Each
3412-02	2 g	Each
3412-03	5 g	Each
3412-04	10 g	Each
3412-05	20 g	Each
3412-06	50 g	Each
3412-07	100 g	Each
3412-08	200 g	Each
3412-09	500 g	Each
3412-10	1000 g	Each



#### **SLOTTED WEIGHT SET WITH HANGER**

This set is useful for weighing and measuring masses in general science and physics laboratory work.

3406-10	Nickel-plated, 1,000 g - with 100 g hook	9/set
3406-11	Nickel-plated, 100 g - with 100 g hook	9/set
3410-10	Brass, 500 g - with 50g hook, Brass	9/set



# MASS, CYLINDRICAL, WITH HOOK AND EYELET, CHROME PLATED STEEL, 500 G ITEM 3406-66

This mass with a hook on top and an eyelet allows users to easily hang multiple masses together. It is useful for weighing and measuring masses in general science and physics laboratory work and is an ideal tool for studying Newton's Laws of Motion, general mechanics, machines, and kinetic energy.



#### **HOOKED WEIGHT, BRASS**

These hooked masses can be used for general science and physics laboratory work. They can be especially useful in lab work for studying Newton's Laws of Motion, general mechanics, machines, and kinetic energy.

1010-100	100 g	Each
1010-20	20 g	Each
1010-200	200 g	Each
1010-50	50 a	Each



#### **HOOKED WEIGHT, CAST-IRON**

These masses are an ideal tool for studying Newton's Laws of Motion, general mechanics, machines, and kinetic energy. These cast-iron masses works exceptionally well in general science and physics laboratory work.

Black, enameled finish

3406-03	100 g	Each
3406-06	20 g	Each
3406-07	200 g	Each



#### MASS WITH HOOK AND EYELET

These masses with a hook on top and an eyelet allows users to easily hang multiple masses together. They are useful for weighing and measuring masses in general science and physics laboratory work and is an ideal tool for studying Newton's Laws of Motion, general mechanics, machines, and kinetic energy.

3422-03	5 g	Each
3422-07	100 g	Each



#### HANGER FOR SLOTTED WEIGHTS, 50 G ITEM 3411-50

This hanger has a top hook and a precise weight of 50 g that makes it ideal for use with slotted weights. It can be used in a number of physics procedures and activities.



### MASSES, CYLINDRICAL, WITH HOOK, 9/SET ITEM 3406-00

These masses are an ideal tool for studying Newton's Laws of Motion, general mechanics, machines, and kinetic energy.



# TRUNDLE WHEEL, DELUXE ITEM 6578-00 (49)

The Deluxe Trundle Wheel can be rolled along the ground to measure linear distance.

#### Specifications:

- Strong plastic spoke wheel 320 mm (12.25") Dia.
- Handle elongated 800 mm (31.5"), retracted: 480 mm (19")



# WEIGHT SET, IN WOODEN BOX, BRASS, 1-50 G, 8/SET ITEM 3416-08

This set of masses can be used with Items #3410-08 and #3410-50. This set is useful for smaller and more precise measurements and can be used in general science and physics laboratory work. It an ideal tool for studying Newton's Laws of Motion, general mechanics, machines, and kinetic energy.

- Calibrated according to tolerances specified by International Organization for Legal Metrology, Class M2
- Set includes 1 of each 1 g, 5 g, 10 g, 50 g, and 2 of each 2 g and 20 g masses



# BALANCE, TRIPLE BEAM, WITH WEIGHTS ITEM 2610-00

This balance is made of high-quality aluminum alloy and stainless steel. It is durable, and economical. The balance is ideal for use in physics labs and classrooms.

Includes three masses
Capacity: 2610 g
Readability: 0.1 g
Platform: 15.2 cm Dia.

Beam: 500 x 100 g, 100 x 10 g, 10 x 0.1 g



# BALANCE, FULL SET, PLASTIC, BLUE \*\*ITEM 5100-00

This sturdy and accurate balance is ideal for measuring and comparing weights in classrooms from preschool through high school.

Dimensions: 533 mm x 115 mm x 140mm (21" x 4.5" x 5.5")

**5100-00A** Arm only Each **5100-00B** Pivot only Each



#### WEIGHTS SET, STACKABLE, PLASTIC

These color-coded stacking masses help children see mass or weight relationships at a glance. Each weight is a different color and thickness, so they are easy to understand and manipulate for small hands. They are perfect for use with a wide variety of balances, including Item #5100-00.

 5155-00
 Set of 54
 Each

 5157-00
 Set of 19
 Each

 5158-00
 Set of 8
 Each

 5160-00
 Set of 35
 Each



### SPRING SCALE, SPRING BALANCE, DUAL SCALE

These Pull Spring Scales are a simple, economical way to measure mass as well as the force acting on an object hanging off the scale's spring. The scales are ideal for mechanics experiments for students or technicians needing to measure the force of a push or a pull. They also has many household uses in the kitchen, workshop, etc.

- Includes: zero adjuster, suspension ring and a load hook
- Materials: polystyrene with anodized metal scale
- Units: grams (mass) and Newtons (force)

3439-21	1 N/100 g	Each
3439-23	2.5 N/250 g	Each
3439-24	5 N/500 g	Each
3439-25	10 N/1000 g	Each
3439-26	20 N/2000 g	Each
3439-27	50 N/5000 g	Each



# SPRING SCALE, SPRING BALANCE, POUND/NEWTON, .56 LB./2.5 N ITEM 3439-40

This Pull Spring Scale is a simple, economical way to measure weight as well as the force acting on an object hanging off the scale's spring. The scale is ideal for mechanics experiments for students or technicians needing to measure the force of a push or a pull. It also has many household uses in the kitchen, workshop, etc.

- Includes: zero adjuster, suspension ring and a load hook
- Materials: polystyrene with anodized metal scale
- Units: pounds (weight) and Newtons (force)
- Range: 0-2.5 N/0-0.56 lb.Subdivisions: 0.1 N/0.02 lb



#### SPRING SCALE, PUSH PULL BALANCE, COLOR-CODED

These Push Pull Spring Scales are a simple, economical way to measure mass as well as the force of a push or a pull. The scales are ideal for mechanics experiments for students or technicians needing to measure the force of a push or a pull. They also has many household uses in the kitchen, workshop, etc.

- Includes: instructions and idea sheet for the classroom
- Units: grams (mass) and Newtons (force)

3439-33	Blue, 250 g/2.5 N	Each
3439-34	Green, 500 g/5 N	Each
3439-35	Beige, 1000 g/10 N	Each
3439-36	Red, 2000 g/20 N	Each
3439-37	White, 3000 g/30 N	Each
3439-38	Yellow, 5000 g/50 N	Each

#### SPRING SCALE, SPRING BALANCE, COLOR-CODED

This Pull Spring Scale is a simple, economical way to measure mass (grams) as well as the force (Newtons) acting on an object hanging off the scale's spring. The scale is ideal for mechanics experiments for students or technicians needing to measure the force of a pull or the mass/weight of an object. It also has many household uses in the kitchen, workshop, etc. Its clear acrylic body allow for students to see how the spring functions.

- Includes: zero adjuster, suspension ring and a load hook
- Materials: clear acrylic body

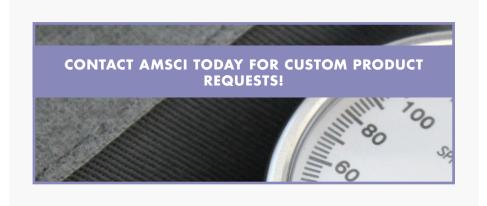
619-01	Blue, 250 g/2.5 N	Each
619-02	Green, 500 g/5 N	Each
619-03	Brown, 1000 g/10 N	Each
619-04	Red, 2000 g/20 N	Each
619-05	White, 3000 g/30 N	Each
619-06	Yellow, 5000 g/50 N	Each



# CALIPERS, MICROMETER SCREW GAUGE, METRIC AND ENGLISH, 0-1 INCH

Use these calipers for measurement of small outside diameters, thicknesses, etc. The calipers are outfitted with a ratchet and a locknut for accurate readings. They are ideal for educational use in engineering and technical schools. Zero adjustment calibration is possible

**3436-03** Plastic Case Each **3436-04** Wooden Box Each





#### CALIPERS, MICROMETER, METRIC AND ENGLISH, 0-25 MM

Use these calipers for measurement of small outside diameters, thicknesses, etc. The calipers are outfitted with a ratchet and a locknut for accurate readings. They are ideal for educational use in engineering and technical schools.

 Materials: Solid brass body with a chrome satin finish; hardened steel screw.

Screw pitch: 0.5 mm (0.05")
Least count: 0.01 mm (0.001")
Range: 0-25 mm (0-1")

Zero adjustment calibration is possible

**3436-01** Plastic Case Each **3436-02** Wooden Box Each



# CALIPER, VERNIER, DUAL SCALE, STEEL PLATED, IMPROVED DESIGN, WITH WOODEN BOX ITEM 3431-00

These new and improved calipers can be used to make measurement in metric or English units. With two sets of "jaws" allow users to measure the inner and outer dimensions of objects. The caliper stem is for measuring the depth of objects. Caliper uses include measuring irregular objects and measuring round objects such as cylinders. The fine precision offered by these calipers are ideal for comparing minor differences in measurements, such as the affect of temperature on a metal.

- Metric scale graduated up to 125 mm in 1 mm divisions.
- English scale graduated up to 5" in 1/16" divisions
- Beveled cross horns make internal measurements easy to read



### CALIPER, VERNIER, DIGITAL ITEM 3433-04

These digital Vernier calipers can be used to make measurement in metric or English units. With two sets of "jaws" allow users to measure the inner and outer dimensions of objects. The caliper stem is for measuring the depth of objects. Caliper uses include measuring irregular objects and measuring round objects such as cylinders. The fine precision offered by these calipers are ideal for comparing minor differences in measurements, such as the affect of temperature on a metal.



# CALIPER, VERNIER, PLASTIC ITEM 3433-03

These economical Vernier calipers can be used to make measurement in metric or English units. With two sets of "jaws" allow users to measure the inner and outer dimensions of objects. The caliper stem is for measuring the depth of objects. Caliper uses include measuring irregular objects and measuring round objects such as cylinders. The fine precision offered by these calipers are ideal for comparing minor differences in measurements, such as the affect of temperature on a metal.





### STEREO MICROSCOPE, LED, PORTABLE, BATTERY POWERED, 20X ITEM 1316-00

This cordless Stereo Microscope is a great tool to use for studying macro specimens such as minerals, insects, and plant parts. The battery-powered LED light shines on specimens from above, making it ideal for viewing opaque surfaces.

#### Features:

- · Upright binocular head
- · Rack-and-pinion focus adjustment
- Eyepiece: 10X WF
- Objective: 2X
- Interpupillar distance: 55-75 mm (2.13" to 3")
- Working distance: 70 mm (2.75")
- Built-in LED light
- Lightweight plastic body, easy to carry
- Packed in Styrofoam inner box
- Requires 2 AA batteries (not included)



### MICROSCOPE, SHINCO-SCOPE WITH SET OF SLIDES ₩ ITEM 9000-00

The Shinco-Scope is a cordless, battery-free microscope that requires only ambient outdoor light or minimal room light. It has a simple, rugged construction that holds up to student use and invites younger students to practice microscope skills. Reflective light capabilities allow viewing of the exterior of 3-D specimens, printed matter, and other ordinary objects. A prism illuminator transmits light up through the stage allowing for viewing the internal structure of thinly sectioned specimens. Additional eyepieces and objective lenses (not included) can be traded out for more powerful options to yield up to 400X magnification. Includes lifetime warranty.

- Total magnification: 30X
- · Course focus only
- · Locked-on eyepiece and stage clips
- Nickel-plated brass tube
- · Corrosion-resistant finish
- Vinyl cover



### ADVANCED STUDENT MICROSCOPE ITEM 1310-00

This compact microscope is optimal for 6th grade to college-level students as well as for hobbyists. Its mirror illuminator means that it does not require electricity and makes it highly versatile.

#### Features:

- Eyepiece: 10X widefield with rotating pointer
- Objectives: achromatic 4X, 10X and 40X R (spring-loaded)
- Magnification: 40X, 100X, 400X
- Stage condenser lens rated at 0.65 N.A.
- Stage clip locked in place, spring-loaded
- Metal stage 110 mm X 110 mm (4-1/3" X 4-1/3")
- Illuminator: substage plano-concave mirror
- Includes: packing Styrofoam box with dust cover



### STUDENT PRISM MICROSCOPE ITEM 9000-10

It comes with spring stage clips, a 10x eyepiece and a 4x objective lens for good quality viewing.

4' x 5.5" x 10.5"; 2.5 lb.





# DIGITAL MICROSCOPE, USB, 200X TIEM 1315-00

This microscope is ideal for closer inspection of everything from dissection to industrial needs. It can be hand-held or mounted, giving the user ultimate flexibility. Its easy 1-touch focus wheel provides simple control of the magnifying power. Still images and videos can be captured with the press of a button. On top of our 30-day satisfaction warranty, we offer a 90-day limited warranty for manufacturer defects.

- · Accessories:
- A1-Alloy Stand
- Safety Cover
- User Guide
- · Teacher's Guide
- CD ROM (Driver)
- · Gift Box
- Size/Dimension: 110 mm (4-1/3") L x 33 mm (1-1/3") Dia.



# MICROSCOPE, HAND HELD, ILLUMINATED, 60-100X ITEM 834

The handheld microscope is pocketsized and great for instant viewing anywhere - in the classroom or in the field.

- Magnification: 60X-100X
- Precision illuminated zoom
- Adjustable focus
- Requires two AA-batteries (not included)



#### **MICROSCOPE SLIDES, GLASS**

These glass slides can be used to hold liquids and cultures for microscopic examination.

- Dimensions: 75 mm x 25 mm (3" x 1")
- Thickness: 1.5mm (0.06")
- Depression size: 13 mm (0.5") Dia. with 0.5-0.6 mm (approx. 0.02") depth
- Ground edges

1035-01 1 Depression 12/pk1035-02 2 Depressions 12/pk



#### MICROSCOPE SLIDES, 1" X 3"

These glass microscope slides are frosted on one end for easy labeling. They are useful in the biology classroom as well as laboratories that utilize light microscopy.

- Thickness 1-1.2 mm
- 9119-00
   Unfrosted
   72/pk

   9119-12
   Unfrosted
   12/pk

   9119-50
   Frosted end
   50/pk

   9119-72
   Frosted end
   72/pk



### MICROSCOPE SLIDES, PLASTIC, 1"X3", 100/PK ITEM 9119-30

These clear, plastic slides are safer and more durable than their glass counterparts. They are an excellent choice for younger students and for heavy usage in biology and life science classrooms.

- 75 mm L x 25 mm W
- 1-1.2 mm thick
- Packaged with tissue paper layered between each slide to prevent static cling



#### **COVER SLIPS**

These glass cover slips are for use with slides to cover and protect specimens for microscope viewing.

**9119-11** Glass 22 mm 100/pk **9119-22** Glass, 24 mm 100/pk **9119-40** Plastic, 24 mm 100/pk



#### MICROSCOPE SLIDE BOX, PLASTIC

Use this custom box for storing standard 75 mm x 25 mm (3" x 1") microscope slides in individually numbered grooves.

- Material: ABS polymer
- Equipped with a printed index card for recording slide titles

 1032-01
 25 Slides
 Each

 1032-02
 50 Slides
 Each

 1032-03
 100 Slides
 Each



#### MICROSCOPE SLIDE BOX, WOODEN, HINGED

Use this wooden box for storing standard 75 mm x 25 mm (3" x 1") microscope slides in individually numbered grooves.

- Slide grooves are smoothly cut
- Equipped with a printed index card for recording slide titles

**1031-01** 25 Slides Each **1031-02** 50 Slides Each **1031-03** 100 Slides Each



### HAND MICROTOME ITEM 6399-20

This economically priced, hand held microtome is used to cut thin tissue sections to prepare slides for microscope viewing. It is an critical tool in the biology classroom as well as histology labs.

- Compact design for easy storage
- 2" (50 mm) Dia. x 2.25" (57 mm) H



### MICROSCOPE SLIDE CARRIER

This product is a convenient way to carry or ship microscope slides.

**9116-00** 1 Slide Each **9116-10** 2 Slides Each



# MAGNIFIER, DOUBLE LENS, FOLDING, POCKET-SIZE ITEM 1017-01

Use this pocket-sized magnifier for reading and close examination of specimens in the field and in the laboratory. Use the lenses separately or combine them for a variety of magnifications.

#### Features:

- Folds into attached case for convenient transportation and protection
- Magnification: 5X (single lens)l 10X (combined lenses)
- Plastic ring approx. 35 mm (1.38") Dia.
- Overall length approx. 55 mm (2.1") closed and 100 mm (4") when opened



# MAGNIFIER, TRIPLE LENS, FOLDING, POCKET-SIZE ITEM 1017-02

Use this pocket-sized magnifier for reading and close examination of specimens in the field and in the laboratory.

#### Features:

- Magnification: 5X (single lens), 10X (two lenses), 15X (three lenses)
- Plastic ring: 30 mm (1.25") Dia.
- Overall length: 40 mm (1.5") closed and 65 mm (2.5") when opened



#### EYEPIECE, MICROSCOPE OCULAR, HUYGENIAN 10X ITEM 1321-10

This 10X eyepiece is suitable for use with microscopes such as the Shinco-Scope (Item #9000-00). It is comprised of two planocovex glass lenses separated by a distance equal to half of the sum of their focal lengths. These dimensions result in an eyepiece that is free of lateral chromatic aberration (color fringing).



# OBJECTIVE, MICROSCOPE, ACHROMATIC

This objective lens can be used as a replacement in compound light microscopes.

**1341-15** 40XR Each **1341-30** 100X Each **1345-20** DIN, 45XR Each



# EYEPIECE, MICROSCOPE OCULAR, WIDEFIELD

This eyepiece can be used as a replacement for microscopes with widefield illumination.

**1321-01** 10X Each **1324-01** 10X Each



# OBJECTIVE, MICROSCOPE, ACHROMATIC

This objective lens can be used as a replacement in compound light microscopes.

**1345-10** DIN, 10X Each **1345-15** DIN, 40X Each



# OBJECTIVE, MICROSCOPE, ACHROMATIC, DIN, 4X ITEM 1345-05

This objective lens can be used as a replacement in compound light microscopes.

Magnification: 4XAperture: 0.10Tube length: 160 mm

Recommended glass cover slip: 0.17 mm

Meets DIN specifications



#### EYEPIECE, MICROSCOPE OCULAR, WIDEFIELD, DIN, 10X ITEM 1326-01

This microscope eyepiece can be used as a replacement for microscopes with DIN (German standard) or JIS (Japanese standard) oculars.



#### BUG VIEWER, EXTRA LARGE, 2.5X ITEM 9112-30

This Bug Viewer is a rugged, clear plastic box with 5 mm (0.19") squares on the bottom for easy specimen measurement. It features a removable 65 mm (2.5") Dia. glass lens. It is a simple but useful tool for biology classrooms, nature centers, and backyards.



# MAGNIFIER, TRIPOD ITEM 1010-09

This magnifier is for use on the laboratory table. It is suitable for elementary biology laboratory, dissections, and for closer examination of specimens.

Magnification: 10XAperture: 18 mm (0.75")Lenses: plano-convex

• Mount: black plastic frame with three metal legs

Undistorted field



# MAGNIFIER, DUAL LENS 3X AND 6X, PLASTIC, HANDHELD

This dual lens Plastic Handheld Magnifier is economical and sturdy, making it ideal for the K-12 classroom. It offers teachers and parents an economical, sturdy choice for even the youngest students to make close observations.

**6457-50** 50 mm (2") Dia. Each **6457-75** 75 mm (3") Dia. Each



#### MAGNIFIER, ECONOMY, 3X, 38 MM, 12/PK ITEM 6457-38

These clear plastic magnifiers are ideal for elementary through high school classroom use. They offer schools and parents an economical choice for even young students to make close observations.

Magnification: 3X

Approx. 38 mm (1.5") Dia.



# MAGNIFIER, TRIPLE LENS 2X, 6X, 8X, CLEAR PLASTIC ITEM 6457-20

This clear plastic Triple Lens Magnifier has three magnifications: 2X, 6X, and 8X. It is useful for close examination in the field and in the lab.

#### Dimensions:

2X lens: 25 mm (1") Dia.
6X lens: 16 mm (0.63") Dia.
8X lens: 13 mm (0.5") Dia.

• 100 mm (4") L



#### **MAGNIFIER, READING GLASS, 2X**

Use this standard magnifier for reading or for close examination in the field or laboratory.

• Black, plastic frame with handle

**1012-04** 75 mm (3") Dia. Each **1012-05** 100 mm (4") Dia. Each



# MAGNIFIER, DUAL LENS 2X AND 4X, PLASTIC, HANDHELD, 4" ITEM 6456-10

Use this handheld magnifier for reading or for close examination in the field or laboratory.

- Magnification: 2X with inset 4X spot lens
- 100 mm (4") Dia.
- Black, plastic frame with handle



#### MAGNIFIER, READING GLASS, 2X, HAND HELD, 3" ITEM 1012-02

Use this standard magnifier for reading or for close examination in the field or laboratory.

- Magnification: 2X
- 75 mm (3") Dia.
- · Polished optical lens
- Metal frame
- Black, plastic handle



#### PERISCOPE AR-987

This periscope allows users to see around and over barriers, and even has a rotating top mirror for seeing backwards. Teachers can use this device as a simple and fun demonstration or as an attention-grabbing phenomenon that can launch and drive learning around basic plane mirror reflection and concepts of optics and light in elementary through high school classrooms.



#### MINIATURE LAMP, REPLACEMENT BULB, 3V, 10/PK ITEM 833

These miniature bulbs are intended for replacement lamp for handheld microscopes.

3V



# EYE LOUPE, SINGLE LENS, 2.5" FOCAL LENGTH, 5X ITEM 4402-00

This lens is ideal for hands-free examination of small objects. The 5X lens in a plastic frame fits comfortably over one eye, providing magnification without interrupting the user's work flow or experiment.

Focal length: 65mm (2.5")

Size: 25 mm (1") L x 35 mm (1.38") Dia.

Magnification: 5X



# MAGNIFIER, MOUNTED IN FOLDING STAND, GLASS, 110MM DIA. ITEM 1019-02

This magnifier unfolds into a self-supporting stand for hands-free use in the classroom or laboratory. When not being used, it folds flat for convenient storage.

#### Specifications:

Magnification: 2X magnification

Lens Diameter: 110 mm (4.33")

 Folded: 165 mm L x 135mm W x 30 mm (6.5" x 5.25" x 1.1") H

 Standing: 165 mm L x 135mm W x 190 mm (6.5" x 5.25" x 7.5") H

#### PREPARED SLIDES, 25/PK

Each of these quality slides showcases a biological sample for close inspection under the microscope. They are ideal for life science and biology classrooms.

Sold in sets of 25

Malaria Parasite (Signet	91-5113	Tick w.m.	91-5619
Ring)		Head Louse	91-5720
Plasmodium Vivax	91-5124	Wasp Sting w.m.	91-5725
Grantia I.s.	91-5133	Muscles Cardiac	91-6319
Tape Worm	91-5313	Muscles Striated I.s.	91-6320
Hook Worm	91-5405	Muscles Skeletal	91-6322
Pin Worm w.m.	91-5406	Muscles Smooth	91-6323
Spider w.m.	91-5616	Tadpole	91-6512



#### PREPARED SLIDES, SET F, APOLOGIA CUSTOM SET, 17/SET ITEM 1550-00

This custom slide set is excellent for investigating and comparing tissue and cells from a variety of eukaryotic organisms. The set is suitable for studying life science and biology in the classroom or homeschool.

Set includes 17 prepared slides in a plastic storage case:

- Amoeba Proteus
- Diatoms
- Euglena
- Ascaris mitosis
- Grantia spicules
- Hydra buddingLeaf c.s. w/veins
- Onion tip root
- Paramecium
- Planarian
- Ranunculus root
- · Ranunculus stem
- Spirogyra w/ conjugation
- Volvox
- · Zea mays root
- Zea mays stem
- Chicken embryo

# PREPARED SLIDES, SET D, INTERMEDIATE BIOLOGY, 25/SET ITEM 1400-00

"This general slide set is good for teaching life science and biology concepts as well as light microscopy skills. All slides are labeled and packed in a plastic storage case. The set consists of 25 total slides.

#### Includes:

- Plant mitosis
- Pollen grains w.m.
- Amoeba w.m.
- Yeast cells w.m.
- · Green algae spirogyra
- Letter e
- Tape worm t.s.
- Silk fabric w.m.
- Lily leaf v.s
- Skin cells v.s.
- Mammal lung t.s.
- · Animal meiosis
- Aves feather w.m.
- · Lily stamen t.s.
- Mammal hair w.m.
- Mosquito mouth parts w.m.
- House fly mouth parts w.m.
- Amphibian blood smear (frog blood smear)
- Human blood smear
- Onion cells w.m.
- Hibiscus stem t.s.
- Wool fabric w.m.
- Fish scale w.m.
- Skeletal muscles w.m.
- Monocot stem c.s. (herbaceous stem—young t.s.)

#### PREPARED SLIDES, 50/PK

Each of these quality slides showcases one of three samples for close inspection and comparison under the microscope. Use this biological specimen slide for classroom observations and comparisons. All slides are clearly labeled for easy organization and selection. Sold in sets of 50.

Feather, 3 Types w.m.	70-1000	Frog Skin w.m.	70-1063
Housefly Head/Leg/Wing	70-1001	Chlamydomonas w.m.	70-1064
Textile Fibers, 3 Kinds	70-1002	Spirogyra Conjugation w.m.	70-1065
Hair, 3 Kinds	70-1003	Chlorella w.m.	70-1066
Letter "e" w.m.	70-1004	Oedogonium w.m.	70-1067
Bacteria Smear	70-1005	Ulothrix Veg w.m.	70-1068
Cheek Cell Smear	70-1006	Mixed Diatoms w.m.	70-1069
14-Oscillatoria w.m.	70-1007	Fucus c.s.	70-1009 70-1070
Mixed Protozoa	70-1007	Porphyra w.m.	70-1070 70-1071
Lilac Leaf c.s.	70-1008	Squamous Epithelium s.m.	70-1071 70-1072
Bread Mold w.m.	70-100 <del>9</del> 70-1010	Adipose Tissue Sec,	70-1072 70-1073
177-Budding Yeast			
5	70-1011	Hyaline Cartilage Sec	70-1074
Plankton Form w.m. Paramecium w.m.	70-1012	Compact Bone c.s.	70-1075
	70-1013	Striated Muscle Sec	70-1076
Amoeba w.m.	70-1014	Nerve Cell s.m.	70-1077
63-Spirogyra Veg w.m.	70-1015	Spinal Cord c.s.	70-1078
Euglena w.m.	70-1016	Cerebellum Sec	70-1079
Plant Root c.s.	70-1017	Artery and Vein c.s.	70-1080
Plant Stem c.s.	70-1018	Blood Smear, Giemsa Stain	70-1081
Flower Bud c.s.	<i>7</i> 0-1019	Liver c.s.	70-1082
Daphnia w.m.	<i>7</i> 0-1020	Stomach c.s.	<i>7</i> 0-1083
Planaria w.m.	<i>7</i> 0-1021	Small Intestine l.s.	70-1084
Budding Hydra w.m.	70-1022	Lung Sec	<i>7</i> 0-1085
Rotifers w.m.	<i>7</i> 0-1023	Spleen c.s.	<i>7</i> 0-1086
Aspergillus w.m.	<i>7</i> 0-1024	Colon c.s.	<i>7</i> 0-108 <i>7</i>
Mold, 3 Types w.m.	<i>7</i> 0-1025	Thyroid Gland Sec	<i>7</i> 0-1088
Mushroom c.s.	70-1026	Pancreas Sec	70-1089
Plasmodium Sp Smear	<b>7</b> 0-1031	Human Skin Sec	70-1090
Pseudomonas Aergu Smear	70-1032	Human Kidney Sec	<i>7</i> 0-1091
Mycobas, Tuberculosis Smear	70-1033	Monocot and Dicot Root c.s.	70-1092
Haemophilus, Influenza		Monocot and Dicot Stem w.m.	70-1093
Smear	70-1034	Monocot and Dicot Leaf w.m.	70-1094
Human Blood Smear	70-1035	Monocot and Dicot Flower	
Human Ovary	70-1036	Bud c.s.	70-1095
Human Sperm Smear	70-1037	Deciduous and Evergreen	
Rat Sperm	70-1038	Leaf c.s.	70-1096
Mammal Ovary	70-1039	Grantia c.s.	70-1097
Cork Section	70-1041	Liver Fluke w.m.	70-1098
Dicot, each	70-1046	Taenia Pisiformis w.m.	70-1099
Meiosis I in Plant Cell	70-1047	Ascaris c.s.	70-1100
Meiosis II in Plant Cell	70-1048	Spider Head and Mouth Parts w.m.	70
Meiosis in Animal Cell,	70 1040	Mites w.m.	<i>7</i> 0-1101
Grasshopper	70-1049	Cockroach Head and Mouth Parts	70-1101 70-1102
Anabanaena w.m.	70-1050	w.m.	70-1103
Volvox w.m.	70-1050 70-1051	Locust Mouth Parts w.m.	70-1103 70-1104
Vorticella w.m.	70-1051	Locust Thorax w.m.	70-110 <del>-1</del>
Rhizopus Stolonifer w.m.	70-1052 70-1053	Locust Abdomen w.m.	70-1105 70-1106
Penicillium w.m.	70-1053 70-1054	Drosophila Wild Type w.m.	70-1106 70-1107
Moss Leaf w.m.	70-105 <del>4</del>	Culex Pupa w.m.	70-1107 70-1108
Pinus Leaf w.m.	70-1055 70-1056	Aphia w.m.	70-1108 70-1109
Fern Prothallium w.m.	70-1056 70-1057	Lily(Lilium) Leaf c.s.	70-1109 70-1110
Helianthus Stem c.s.		Root Mitosis	
Bed Bug w.m.	70-1058	Mitosis, Onion Root Tip Cells, I.s.	70-4001
Earthworm c.s.	70-1059	Frog, Blood Smear	70-90401
Sea Urchin Ova w.m.	70-1060	Streptococcus	70-90808
Fish Scales w.m.	70-1061	Mitosis, Animal Cell Stages	088-90142
i isii Scales W.III.	70-1062	Pilitosis, Allilliai Cell Stages	088-90925

#### PREPARED SLIDES, PLANT/ HUMAN/ANIMAL SET, 25/ SET ITEM 1450-00

These high-quality slides feature high contrast staining of tissues from plants, mammals, and humans. They are suitable for life science and biology classes.

Includes 25 slides in a hard, plastic storage case:

- Plant cells (wm)
- Monocot root (cs)
- Monocot stem (cs)
- Dicot root (cs)
- Dicot stem (cs)
- Striated muscle (wm)
- Mammal adrenal gland (cs)
- Nerve cells (smear)
- Human bone marrow (smear)
- Adipose tissue (cs)
- Epithelium columnar (skin)
- Epithelium squamous
- Muscle cardiac
- Mammal pituitary gland (cs)
- Mammal thyroid gland (cs)
- Mammal brain (cs)
- Human cartilage (ts)
- Human blood smear
- Human bone (cs)
- Human skin (vs)
- Human liver (ts)Mammal kidney (ts)
- Mammal lung (ts)
- Mammal oesophágus (ts)
- Human ovary (ts)
- Case

#### PREPARED SLIDES, STARCH, 12/SET ITEM SP-1200

Each of these quality slides showcases a starch sample for close inspection under the microscope. They are ideal for life science and biology classrooms.

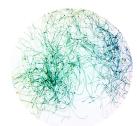
• Includes plastic storage case















# BUTTERFLY PAVILION, HANGING BUTTERFLY CAGE M • ITEM 9114-48

This butterfly pavilion is an economical and simple option for breeding and viewing butterflies. Its lightweight, durable construction makes for easy hanging. See-through mesh with zippered entry allows easy access for care and feeding, and keeps butterflies inside. Given its dimensions, this butterfly cage is an exciting addition to elementary school classrooms for studying and learning about insects and life cycles. It is also useful for hobbiest who wish to breed butterflies. Butterflies not included.

# BUTTERFLY PAVILION, POP-UP BUTTERFLY CAGE \*\*

These butterfly cages allow children, students, and butterfly enthusiasts to witness the wonder of the butterfly life cycle. The smaller size makes it a practical choice for school and home use. The cage is useful as a tool for teaching about insects and/or life cycles and are child- and insect-friendly habitat.

**9115-12** 300 mm (12") H Each **9115-18** 450 mm (18") H Each **9115-24** 600 mm (24") H Each



#### ANT HABITAT

This Ant Habitat kit allows children, students, and ant enthusiasts of all ages to observe the behavior of ants as they work and burrow through the blue nutrient gel developed by NASA to maintain ants in space. Watch the ants work together to build tunnels, chambers, and bridges. Ants not included.

#### Includes:

- Tank with Nutrient Gel
- Tunnel Starter Tool
- Magnifier
- Instructions

 9110-30
 LED Kit
 Each

 9110-31
 NON-LED Kit
 Each

 9110-40
 Replacement Gel
 Each





# **AQUATIC NET ITEM 5894-65**

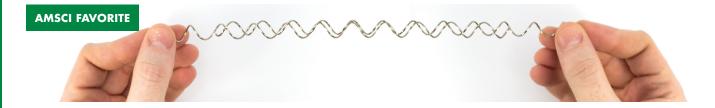
This long-handled aquatic net is used for collecting and sampling invertebrates in aquatic environments such as streams and ponds. It is an ideal tool for life science, environmental science, and ecology classes.



#### **FLEX TANKS**

This thermo-form, clear plastic container is flexible, yet sturdy. It can be used as an aquarium, terrarium, or critter chamber. The tank is useful for biology labs and classrooms.

1165-01	Tank Only, 1 Gallon	Each
1165-02	Lid Only, 1 Gallon	Each
1166-01	Tank Only, 1.5 Gallon	Each
1166-02	Lid Only, 1.5 Gallon	Each



### MAGIC WIRE ILLUSION 1991 ITEM 3194-01

These fascinating illusion wires are seemingly never-ending. As they are pulled apart they appear to be untwisting from each other, but they never come apart! Are the wires getting longer? Is it magic? This fun toy can be used to engage students and drive learning about optics, the sense of sight, and the eye-brain connection.

- · Some assembly required
- Comes with instructions



# STUDENT BLOOD PRESSURE KIT TIEM 3646-52

This blood pressure cuff takes simplified, precise readings using an economical aneroid blood pressure kit. It is ideal for high school and college life science and health science classrooms.

- · Features:
- Button valve that allows for gradual pressure release
- Easy-to-read gauge
- Velcro cuff
- Sensitive stethoscope
- Ships in reusable carrying case

### INOCULATING LOOP, NICHROME WIRE

This inoculating loop made of twisted nichrome wire is reusable and can be used with the Kolle Needle Holder (Item #CM-23) to transfer bacterial samples to a culture plate. It is a standard tool in microbiology labs.

CM-21 3mm Dia. Loop, 3" EachCM-22 5mm Dia. Loop, 3" Each

#### INOCULATING NEEDLE, NICHROME WIRE, 24 GAUGE, 3" ITEM CM-27

This inoculating needle made of twisted nichrome wire is reusable and can be used with the Kolle Needle Holder (Item #CM-23) to transfer bacterial samples to a culture plate. It is a standard tool in microbiology labs.

• Length: 75 mm (3")



### KOLLE NEEDLE HOLDER ITEM CM-23

The Kolle Needle Holder is used as a handle for wire inoculating loops (Items #CM-21 and #CM-22)





#### BIOPLAST, 5 STAGES FROG LIFE HISTORY ITEM WD3112

See the stages of a frog's life up close using this bioplast. The clear plastic embedment protects fragile specimens and provides an interactive way for them to be handled and inspected close-up without damage. The 5 stages include: egg, tadpole, tadpole with legs, froglet, adult frog.



# BUTTERFLY IN DISPLAY #9 ITEM 9113-12

These are beautiful, real butterflies and moths encased under glass in a wooden frame. This item can be used for close inspection of a variety of butterflies and moths. It also makes a great gift.



#### BIOPLAST MOUNT, CABBAGE BUTTERFLY LIFE CYCLE, PLASTIC ITEM 10-1540

Students can use this bioplast to study the life cycle of the butterfly. This clear plastic embedment protects and mounts fragile specimens and provides an interactive way for them to be handled and inspected close-up without damage in the biology classroom.



#### BIOPLAST MOUNT, BIOLOGICAL SYMMETRY, PLASTIC ITEM 10-1530

Students can use this biological symmetry bioplast to compare and contrast specimens that demonstrate asymmetry, radial symmetry, or bilateral symmetry. This clear plastic embedment protects and mounts fragile specimens and provides an interactive way for them to be handled and inspected close-up without damage in the biology classroom.



#### BIOPLAST MOUNT, HONEY BEE LIFE HISTORY, PLASTIC ITEM 10-1650

Students can use this bioplast to study the life history of the honey bee and compare three different types of honey bees. This clear plastic embedment protects and mounts fragile specimens and provides an interactive way for them to be handled and inspected close-up without damage in the biology classroom.



#### BIOPLAST MOUNT, HOUSEFLY LIFE HISTORY, PLASTIC ITEM 10-2000

Students can use this bioplast to study the life cycle of a house fly including these 5 specimens: egg, larva, pupa, male and female adults. This clear plastic embedment protects and mounts fragile specimens and provides an interactive way for them to be handled and inspected close-up without damage in the biology classroom.



#### BIOPLAST MOUNT, ROOT SYSTEMS, PLASTIC ITEM 10-1800

Students can use this bioplast to observe four types of root systems: tap root, adventitious, nodulated and fibrous. This clear plastic embedment protects and mounts fragile specimens and provides an interactive way for them to be handled and inspected close-up without damage in the biology classroom.



#### BIOPLAST MOUNT, SEA LIFE SPECIMEN SET, PLASTIC, 4/SET ITEM 10-2500

Students can use this bioplast set to compare and contrast four sea life specimens. This clear plastic embedment protects and mounts fragile specimens and provides an interactive way for them to be handled and inspected close-up without damage in the biology classroom.



#### BIOPLAST MOUNT, WASP SPECIMEN, ACRYLIC ITEM 10-3400

Students can use this bioplast to study the paper wasp. This clear plastic embedment protects and mounts fragile specimens and provides an interactive way for them to be handled and inspected close-up without damage in the biology classroom.

 Species: Polistes hebraeus fabricius



#### BIOPLAST MOUNT, BEETLE SPECIMEN, ACRYLIC ITEM 10-3700

Students can use this bioplast to compare and contrast two beetles (scarab and leaf beetle). This clear plastic embedment protects and mounts fragile specimens and provides an interactive way for them to be handled and inspected close-up without damage in the biology classroom.

 Species: Popillia quadriguttata & Platycorynus peregrinus herbst



#### BIOPLAST MOUNT, CRAB SPECIMEN, ACRYLIC ITEM 10-3800

Students can use this bioplast to study the mudflat crab. This clear plastic embedment protects and mounts fragile specimens and provides an interactive way for them to be handled and inspected close-up without damage in the biology classroom.

Species: Sesarma dehaani



### MODEL OF THE HUMAN BRAIN ITEM 1500-10

This life-sized plastic model of the human brain comes mounted on its own stand. The model is hand-painted with numbered parts and a key with part names. It is perfect for life science, biology and neuroscience classes.



#### MODEL OF HUMAN LUNG ITEM 1500-30

This 3-dimensional model shows the basic structure of the human lungs. It is made of indestructible polymer. The model is hand-painted with numbered parts for color and detail.



# MODEL, HUMAN EYE, PLASTIC ITEM 1020-11

This 3X plastic model of the human eye comes mounted on a stand. It can be deconstructed into 6 numbered parts with keyed descriptions. The model is a useful visual and manipulative for biology and anatomy classes.



### MODEL OF ANIMAL CELL ITEM 1530-10

This cell model incorporates details from microscopic slides (not included). The nucleus, mitochondria, endoplasmic reticulum, and ribosomes are clearly shown. The model is mounted on a stand with a key card.



# MODEL OF PLANT CELL ITEM 1500-15

This colorful cross-sectional model shows the typical structure of a generalized plant cell. It is made of indestructible polymer. The model is hand-painted and has an informational key.



# MODEL OF PLANT MITOSIS ITEM 1530-21

This model shows mitosis stages in plant cells. It identifies the parts of the cell phases of mitosis and the changes cells undergo through the stages. The model is mounted on board with key card. It is made of hard plastic.



### MODEL OF LEAF STRUCTURE ITEM 1530-25

This 3-dimensional model shows leaf structure in detail. It is made of indestructible polymer. The model is mounted on a stand for convenient viewing.





# FROG DISSECTION MODEL 1991 ITEM 1540-15

This is the perfect tool for teaching frog anatomy to any science or biology classroom. It is large enough to be seen from the back of the classroom and detailed enough to warrant close-up study. The model features both ventral and dorsal dissections. The ventral side displays the digestive, respiratory, circulatory, and system. It also includes the liver, gallbladder, two egg masses, and vomerine teeth. The dorsal side exposes the brain, central nervous system, and eyeball. Both sides reveal the skeletal and muscular system. A total of 67 structures are numbered and referenced in keys on the two-sided base.

• 12.5" W x 15.5" H x 6" D (317 mm x 380 mm x 150 mm)



#### LUNG BREATHING MODEL ITEM 6080-30

This Lung Breathing Model is an excellent product that demonstrates the function of the diaphragm and the lungs during respiration and breathing. It shows how the lungs are emptied and filled with air by the relaxation and contraction of the diaphragm muscle.



# BOWLES STETHOSCOPE DIAPHRAGM TYPE ITEM 3646-02

This simple and sturdy instrument allows students to detect feeble sounds like heart beats. It consists of a chest piece, latex Y tube, and plated brass binaurals with plastic earpieces. The stethoscope is a useful instrument in biology courses.



### STETHOSCOPE, TEACHING ITEM 3648-01

For simultaneous listening of heart sounds by the student and instructor or two students, through a single chest piece. Consists of a bowles chest piece, dual head sets of plated brass binaurals with plastic earpieces, black latex extension and y-tubing connector



### **BLOOD TYPING TRAY ITEM NEO-710**

Use this washable plastic tray for performing ABO and Rh blood-typing. The tray has 3 depression wells to facilitate the testing. It is great for biology experiments and demonstrations.

•3" (75 mm) L x 2" (50 mm) W







# LUNG VOLUME BAG SET ITEM 3646-15

This set is great for determining maximum lung volume. Students exhale fully into a bag, then squeeze the expired gas into the bottom of the bag. Bag marked in 100-ml increments up to 6 L. Set includes 4 heavy-gauge plastic reusable bags with mouthpiece holders and 30 disposable mouthpieces. Lung Volume Bag only available, Item 3646-15.





#### SOLAR CELL DOLLY

Experiment by changing the angle of the solar panel, adding weight, running it uphill, and running it on both rough and smooth surfaces.

1000-11Solar Cell DollyEach1000-13TransparentEach1000-13CTransparent KitEach



#### **SOLAR PANELS**

These solar cells are used to power small motors and other devices which draw small amounts of current. They can be used individually, connected for more voltage, or parallel for more current.

**1000-01** 1.0 V, 400 mA Each **1000-02** 0.50 V, 500 mA Each



# CROOKES RADIOMETER **●** ITEM 8224-00

Each vane is shiny on one side, blackened on the other, and mounted on a spindle in an evacuated glass bulb. When exposed to the sun or other intense light, the vanes begin to rotate. By studying the rotation intensity, students can measure electromagnetic radiation and witness an eye-caching demonstration simultaneously.



#### SEISMOGRAPH ITEM 6455-80

For use with measuring the strength and severity of movement caused by an earthquake. Consists of a rod mounted on a wooden base that has a free moving pencil attached. The pencil hangs over a roll of paper and accurately records the vibration of the moving pencil.



### THREE GLOBAL MODEL ITEM 2120-04

A high quality model designed to demonstrate on a large scale the relative movements of the sun, earth, and moon, so that the causes of a number of phenomena can be understood such as day and night, changing the length and direction of shadows, seasons of the year, phases of the moon. Teachers notes written for the non-specialist astronomer cover all these topics.



### STREAM TABLE ITEM 6600-00

This portable unit is outstanding for demonstrating stream erosion and deposition of soils either in the classroom or outside. Setting up this demonstration is a breeze! Order sand separately.

• 42.25" L x 14.75" W

#### Kit includes:

- Plastic tray
- Drain trough
- Tray support stand
- Siphon tube







# WATER CYCLE SIMULATOR WITH ACTIVITY GUIDE ITEM 6650-00

This model can be used to duplicate the individual processes of the water cycle (evaporation, condensation, and precipitation).

#### Includes

- Ten transparent 8.5" x 11" Full-color study prints
- Activity Guide



# CLEAR PLASTIC GEOBOARD ITEM GEO-900

Clear plastic Geoboard with the dimensions of  $9'' \times 9''$  with  $11 \times 11$  pegs. Board is umbered and one sided.



#### WIND VANE ITEM 6575-00

Track the direction of the wind with this sleek instrument. Wind vanes have a long history of ornamental use, but are also useful for scientific purposes.

• 6" L x 6" W x 6" H



# ANEMOMETER TITEM 6577-00

This Anemometer is the perfect instrument for introductions to force measurements and measuring the direction of the wind.



# MAKING DEW KIT (CLASSROOM PACK) ♠ ♦ ITEM 9447-15

This kit helps students understand how dew and frost are formed. They will also understand concepts of condensation, dew point, evaporation, humidity, and sublimation. Making Dew classroom pack contains materials for 15 pairs of students.



#### LORENTZ FORCE DEMO

This compact, self-contained unit is useful for demonstrating the Lorentz force exerted by magnetic fields on moving electrons and the deflection of moving electrons within an electric field. The charge-to-mass ratio (E/M) of the electron can be determined as well. It is great for teaching physics in a classroom demonstration and for grouped student experiments.

- Comes with instructions
- 110 V/60 Hz AC

#### Components:

- Helmholtz Coils and power supply, mounted in wooden case with detachable panel
- Comes with an Instruction Manual
- · Adjustable, removable scale
- Power Cable (US Standard)
- 2 extra fuses & 2 screws
- Vertically-oriented vacuum tube (bulb)

**3737-00** Lorentz Force Each **3737-01** Replacement Bulb Each



# ECONOMY LORENTZ FORCE DEMONSTRATION ITEM 3737-11

This unit is useful for demonstrating the Lorentz force exerted by magnetic fields on moving electrons and the deflection of moving electrons within an electric field. No power supply.



# DC POWER SUPPLY ITEM 8560-00

This safe and reliable power supply is a convenient source of low voltage DC power. The dial easily turns to select the desired voltage and it plugs into a standard electrical outlet.

- 3-12 V DC
- 1.25 A max.



#### **INDUCTION COIL**

Suitable for use with gas filled discharge tubes, vacuum tubes, eudiometers and for general laboratory work. Comprised of two coils fully enclosed in a polished wooden case with binding posts.

**3148-01** 25mm Each **3148-02** 50mm Each



# ELECTRIC BELL ITEM 3166-02

This bell operates on 3 to 6 V DC battery or 6 to 10 V AC transformer. The coils and terminals are enclosed under a snap-on metal cover. The bell is removable for use as a buzzer.

Mountable



# TOUCH BOARD STARTER KIT TITEM 9200-60

The Touch Board allows users to connect almost any material, object, or space to the digital world. The board comes pre-programmed to play an audio guide which takes you through board features and setup. The Touch Board was designed to work with Electric Paint as a way to turn anything into an interface.

#### Includes:

- 1 Touch Board
- 1 10 ml tube of Electric Paint
- 1 Electric Paint, 50 ml
- 1 Guidebook
- 1 MicroSD Card
- 1 MicroSD Card Reader
- 1 Micro USB Cable
- 1 Mini Speaker
- 1 House Stencil
- 12 Alligator Clips (colors vary)
- 12 Sticky Tabs
- 1 Stencil Brush
- 2 Paper Cutouts
- 3 Velcro Stickers



# ELECTRIC PAINT PEN **→** ITEM 9200-10

This special paint can help create electrical circuits on almost any surface, and dries in under 15 minutes to become conductive. Use this to lead a class in painting circuits, cold solder components onto paper, or create a cardboard piano, this material is a quick and safe addition to your toolbox.



### HAND GENERATOR TEM 4225-00

This handheld crank generator produces up to 6 volts of DC electricity and is a great power supply for many experiments while demonstrating the conversion of mechanical energy to electric energy.

**4225-10** Spare Leads Each **4225-20** Spare Gears Each



### BIAS CIRCUIT BOARD ITEM AR-107

Demonstrate the heart of Cell Phone and Wireless Communication modules! This clever demonstration shows how your voice can be sent on a light beam through the air or through optical fibers.



#### **KNIFE SWITCH**

This switch is useful as a basic component for any electrical laboratory.

- · Mounted on Bakelite base
- Allows visible connection for easy use
- With screw holes and suitable for bench fixing and panel mounting
- 12 volts, 1 amp

3147-21	SPST	Each
3147-21-6	SPST	6/pk
3147-22	SPDT	Each
3147-43	DPST	Each
3147-44	DPDT	Each



## TWO POTATO CLOCK ITEM 9456-50

Make your fruits and vegetables work for you. By inserting the zinc and copper strips into the potatoes, you will create an oxidation/reduction reaction that is converted to low voltage. Enough power is created to operate the simple LED clock on the base. Comes with an Instruction Manual.



#### POROUS POTS EMPTY PORCELAIN 75 MM X 35 MM ITEM 5312-01

This pot is for use with voltaic cells. It is an unglazed porcelain cylindrical cup. The pot is a simple but useful tool for electrical experiments and demonstrations.

1.38" Dia. (35 mm) x 3" (75 mm) H

VIEW AND DOWNLOAD SUPPLEMENTAL TEACHERS MATERIALS ONLINE BY VISITING

www.american-scientific.com



# VAN DE GRAAFF GENERATOR ITEM 2120-02

Put on stunning demonstrations of static electricity with this Van de Graaff Generator! Students can touch it and feel the power of static electricity as their hair starts to stand on end. Use the discharge bulb to safely discharge the generator after use.



#### VAN DE GRAAFF GENERATOR, SMALL ITEM 2120-00

Put on stunning demonstrations of static electricity with this Van de Graaff generator!

Students can touch it and feel the power of static electricity as their hair starts to stand on end. Use the discharge bulb to safely discharge the generator after use. Compact size with all the features of a full sized generator. The van de graaff generator comes with the following accessories kit:

- Pith Ball On A String
- Discharge Electrode
- · Swatch of Hair
- Insulated Cylinder With Pith Balls
- Comb



### DISCHARGE ELECTRODE ITEM 2120-09

This quality hand-held electrode can be used with a generator, such as a Van de Graaff generator. Its polished aluminum sphere at the top safely discharges a generator by receiving the electric discharges it releases. The sphere is mounted on an insulated rod for easy and safe handling of the electrode.



### ELECTROSTATIC DISCHARGE TONGS, ADJUSTABLE ITEM 2120-10

These adjustable metal discharge tongs consist of a plastic insulated handle with two arching metal rods attached at a central pivot point. At the top of each arch, a 0.5" metal sphere is attached. The arches are adjustable to a max. distance of 11".



#### **FRICTION ROD**

These friction rods are used for creating frictional electricity with materials like wool or fur, for charging electroscopes, etc. They are a simple but useful tool for science classrooms.

**3128-01** Solid Soda Glass Each **3128-02** Ebonite (Hard Rubber) Each



#### **FRICTION PAD**

For producing electrostatic charges on friction rods, electrophorus plates etc.

**3129-01** Filk Flannel Each **3129-02** Wool Flannel Each



# FRICTION ROD SET TEM 3128-07

Learn about the triboelectric series, friction, induction and conduction! With this set, students can develop a model of what is happening to the electrons around the atoms in a conductor versus an insulator.

#### Includes:

- 1 hollow glass rod
- 1 lucite rod
- 2 hard rubber rods
- 1 flannel pad
- 1 silk pad
- 1 fur pad



#### LIGHTNING BALL 🍎 🖾

These glass globes are filled with an inert gas under low pressure. The lightning bolts are produced by the Tesla coil in the middle that creates a large potential difference within the globe.

**2120-00** 8" Each **2120-00X** 8", Plays Music Each



### ELECTRIC ENERGY SET ☐ ITEM 1113-10

Students can experiment with this kit to discover for themselves how energy exists in many forms and the resources from which society can benefit. Some examples include mechanical, chemical, light, and wind. Harnessing these forms and converting them into electricity creates easier ways of accomplishing many tasks. Comes with instructions.



# CIRCUIT TESTER, DC VOLTAMETER 0 TO 5V, 0 TO 15V (VOM) ITEM 3232-10

Volt/ohm/milliammeter, 20k ohm/v. Contains 23 ranges and is equipped with mirror-back scale, buzzer, battery tester and meter overload protection. Made of high-impact plastic with adjustable handle. Includes test leads, batteries, carrying case and instruction manual.





# ENERGY BALL M → □

These Energy Balls now has upgraded electronics, and a pull tab to preserve battery life. It is a great way to demonstrate for kids how to conduct electricity in a circuit. The balls contain 2 small metal electrodes that, when touched simultaneously, cause it to light up.

6580-00-BAG includes bag





# DIGITAL MULTIMETER ITEM 3232-20

This compact Digital Multimeter is a full-featured unit with a 3.5" digit LCD display.

• Includes test leads, 9-V battery, and instructions.



### BASIC METER •

You can use this meter as a voltmeter and as an ammeter, simply by sliding the scale. It is very convenient for demonstrative applications.

- 100 uA 5 A
- 100 mV 50 V



### WIMSHURST MACHINE **♦** □ ITEM 3131-01

Use this machine to generate static electric charges and cause electric discharges. Turn the hand crank to rotate the 2 high-resistance plastic disks in opposite directions. Disk Dia. is about  $10^{\prime\prime\prime\prime}$  (250 mm) with equally spaced metal sectors. A rapid sequence of sparks can be generated by lowering the system's capacitance.

· Mounted on insulated wooden base



### SPARE BELTS FOR WIMSHURST MACHINE, PAIR ITEM 3131-03

Use this spare part with our Wimshurst Machine (Item #3131-01).



# MILLIKAN OIL DROP APPARATUS ■ ITEM 3134-03

This compact, portable instrument is made of three main parts: an oil drop chamber, a microscope, and a power supply. Using this product students can learn about velocity, gravity, and the exact charge of a single electron!



# ELECTROSCOPE FLASK ITEM 3132-01

Use this flask for experiments in detection of electric charge and determination of polarity. It consists of an Erlenmeyer flask and a plated rod with a knob through a rubber stopper.

- Comes with 1 pair of aluminum leaves
- Additional aluminum leaves available (Item #3135-02)



# ELECTROSCOPE PITH BALL TIEM 3134-01

Use this item for demonstrating the attraction and repulsion of electric charges. It consists of an insulated brass pillar and hook on a base. It is useful for interesting and engaging demonstrations.

- Supplied with 2 colored pith balls with strings attached
- Additional pith balls available in packs of 10 (Item #3134-02)



# FOIL ELECTROSCOPE ITEM 3135-30

This enclosed case form of an electroscope is economical as well as compatible with other apparatuses so one can carry out many electrostatics experiments. The all-plastic construction prevents air flow from interfering with the deflection of leaves, but the transparent design allows observation from all directions. Grounding eliminates deflections caused by charges residing in the case.



# ALUMINUM LEAVES FOR ELECTROSCOPE, PAIR ITEM 3135-02

These replacement leaves are for electroscopes. They can be used with Item #3132-01 and Item #3135-30.



#### PITH BALL, 10/PK ITEM 3134-02

These replacement Pith Balls are for electroscope Item #3134-01.



# FLAT ELECTRODES ALUMINUM ITEM 3132-01

Use these electrodes for assembling voltaic cells, electrolysis experiments, etc. They are a useful addition to classrooms and labs.

- Made of aluminum and stamped with periodic symbol "Al"
- Approx. 1" (25 mm) W x 5" (125 mm)



### FLAT ELECTRODES COPPER ITEM 3151-03

Use these electrodes for assembling voltaic cells, electrolysis experiments, etc. They are a useful addition to classrooms and labs.

- Made of copper and stamped with periodic symbol "Cu"
- Approx. 1"(25 mm) W x 5" (125 mm)



# FLAT ELECTRODES IRON ITEM 3151-04

Use these electrodes for assembling voltaic cells, electrolysis experiments, etc. They are a useful addition to classrooms and labs.

- Made of iron and stamped with periodic symbol "Fe"
- Approx. 1" (25 mm) W x 5" (125 mm)



# FLAT ELECTRODES ZINC ITEM 3151-06

Use these electrodes for assembling voltaic cells, electrolysis experiments, etc. They are a useful addition to classrooms and labs.

- Made of zinc and stamped with periodic symbol "Zn"
- Approx. 1" (25 mm) W x 5" (125 mm)



# ELECTRODES, FLAT WITHOUT BINDING POSTS

Use these electrodes for assembling voltaic cells, electrolysis experiments, etc.

• 5.25" L x 0.75" W x 0.05" thick

**3150-03** Copper 16/pk **3150-06** Zinc 16/pk



# ELECTRODES, FLAT WITH BINDING POSTS CARBON ITEM 3151-22

Flat electrodes with binding post terminal. Made of Carbon

• 5.25" L x 0.75" W x 0.05" thick



### CARBON ELECTRODE ROD 9" ITEM 3151-41

This Carbon Electrode Rod is used for electrolysis of reactive materials like hydrochloric acid and other compounds. It is a suitable alternative to platinum. Alligator clips can be used for making wire connections.

•  $9" \times 0.19"$  (230 mm x 5 mm) Dia.



# CARBON ROD, 4", 10/PK ITEM FRE-29

These Carbon Rods are excellent for electrical experiments. Alligator clips can be used with them to make wire connections.

• 0.16" Dia. x 4" (4 mm x 100 mm)



#### **D CELL BATTERY HOLDER**

These holders are for using D cell battery. The holder is provided with holes for attaching to a board or panel. Any number of cells can be connected in series or parallel.

**3160-01** Aluminum Each **1125-00** Plastic Each



#### PLASTIC BATTERY HOLDER

Connects 1.5 to 6 V.

**3160-00** D Cell 4/pk **3160-02** AA Cell 4/pk

# NEED HELP FINDING THE RIGHT PRODUCTS?

CONTACT YOUR AMSCI REPRESENTATIVE



### ELECTROSTATIC DEMONSTRATION KIT ITEM 2120-15

Demonstrate multiple electrostatic principles including: electrophorus, charging electroscopes by induction and contact, electrostatic attraction, repulsion and induction, Faraday's ice pail experiment, and surface distribution of the charge.

#### Kit includes:

- Faraday Cage with Cover
- Aluminum Can
- 2 Electroscopes (with spare foils)
- 2 Electroscope Ball Terminals
- 2 Electroscope Disc Terminals
- 2 Electrophorus (with insulating handle)
- Acrylic Sheet
- Charge Transfer Ball
- Neon Bulb
- Insulated Point
- · 3 Pairs of Electrostatic Cork Balls
- Acetate Cloth
- Polyethylene Friction Rod
- PVC Friction Rod
- Acrylic Friction Rod
- Glass Friction RodNylon Friction Rod
- Polystyrene Friction Rod
- Instruction Manual



#### **MINIATURE LAMPS**

These miniature bulbs are for use with a variety of electricity and science projects.

4008-00	1.5 V, 0.3 A	10/pk
	•	
4008-10	2.5 V, 0.3 A	10/pk
4008-20	2.2 V, 0.25 A	10/pk
4008-22	2.5 V, 0.3 A	10/pk
4008-37	3.2 V, 0.35 A	10/pk
4008-60	6.3 V, 0.50 A	10/pk



### SERIES/PARALLEL BULB HOLDER ITEM 2118-05

This Bulb Holder is a simple but effective tool used to explore series and parallel circuits. 5 bulbs can be arranged in series, parallel, or complex, by adjusting the Bussbars. Includes 5 bulbs.



# BULB HOLDER WITH FAHNESTOCK CLIPS, 10/PK ITEM 3163-01

This open bulb miniature socket consists of a 1.75" (45 mm) diameter plastic base with 2 plated Fahnestock clips for connecting wires to a miniature lamp bulb holder. Use it for electrical experiments and demonstrations.



# RECEPTACLE FOR MINIATURE LAMP ITEM 3161-01

Use this receptacle for flash lamp bulbs. It consists of a rolled shell of brass mounted in a plastic base with 2 screw terminal connections. For use at voltages up to 50 V AC.

 1.38" (29 mm) Dia. and height 0.63" (16 mm) H



#### DC MINI MOTOR WITH TWO LEAD WIRES, 10/ PK ITEM 3167-60

This Miniature Motor has flat sides for easy use. The motor is a useful staple for those interested in electric circuits.

- Up to 11,000 rpm
- 1.5 3 V



### BUZZER WITH LEAD WIRES

These buzzers are great for science fair projects. Create your own circuits or test batteries and solar cells with this buzzer.

**4009-15** 1.5V Each **4009-35** 3v-24v Each



#### **FAHNESTOCK CLIP**

For making temporary one wire electrical connections in low voltage electrical circuits. With a hole for mounting.

**3162-02** Plated Brass Each **3162-03** Brass Each



### CONNECTION WIRE, WITH ALLIGATOR CLIP AND BANANA PLUG

This connectors are soldered to the insulated lead wires.

**9819-05** Black, 24" (600 mm) Each **9819-06** Red, 24" (600 mm) Each



#### LED GRAIN OF WHEAT BULB 49 🍎

Upgrade your outdated bulbs to the 21st century! These white color LED bulbs offer an easy replacement, making them ideal for use in a variety of miniature equipment and circuit applications. The wheat bulbs can also be used in control panels, high quality commercial and industrial controls.

**9125-03** 0.003 A, 3 V Each **9125-12** .5 A, 12 V Each



#### MAGLEADS, 12"

Instantly make working electrical circuits with these ingenious leads fitted with a tiny powerful magnet at either end. Place near to a battery case and it connects by itself and place next to a bulb holder connector and you have your first working circuit.

ML300B Black 10/pk ML300C Clear 10/pk ML300R Red 10/pk



# CONNECTION WIRE WITH ALLIGATOR CLIPS

These PVC-insulated 18-gauge copper wires have 2" (50 mm) PVC-insulated alligator clips on both ends. They are useful for making circuits and electrical demonstrations.

• Diameter: 2.6mm

 9130-01
 R/B/Y 16" (400mm)
 6/pk

 9130-02
 R/B/Y 24" (600mm)
 6/pk

 9130-03
 R/B/Y 18" (450 mm)
 6/pk

 9130-08
 Black 18" (450 mm)
 Each

 9130-09
 Red, 18" (450 mm)
 Each



# CONNECTION WIRE WITH ALLIGATOR CLIPS

These jumper cords are 22-gauge with insulated alligator clips. They are useful for making circuits and for electrical demonstrations.

• Diameter: 2.6mm

**9122-12** R/B/Y/W/G, 24" 5/pk **FRE-14** R/B/Y/W/G, 14" 5/pk



#### CONNECTION WIRE WITH ALLI-GATOR CLIPS RED 24" (WITHOUT INSULATION COVER), 7/PK ITEM 9125-03

This item is made of standard insulated copper wire with non-insulated alligator clips at each end. It is useful in laboratory work.

Diameter: 2.6mmGauge of Wire: 16"



#### STACKABLE BANANA PLUG

Useful in all laboratory work.

**9820-00** 24", 4mm (2 Red/2 4/pk Black)

**9820-06** 24", 4mm, (3 Red/3 6/pk Black)





#### **CONNECTION WIRE WITH ALLIGATOR CLIPS**

This PVC-insulated copper wire has 2" (50 mm) PVC-insulated alligator clips on both ends.

Diameter: 2.6mmGauge of Wire: 16

9119-01	Red, 12" (300 mm)	Each
9119-02	Black, 12" (300 mm)	Each
9119-06	3 Red, 3 Black, 12" (300 mm)	6/pk
9120-01	Red, 24" (600 mm)	Each
9120-02	Black, 24" (600 mm)	Each
9120-06	3 Red, 3 Black, 24" (600 mm)	6/pk
9121-01	Red, 36" (900mm)	Each



#### CROCODILE CLIPS, 37 MM L, 10/PK ITEM 9123-01

The steel clips are used for connecting wires with a crimp connection.



# 9V LEAD W/ALLIGATOR CLIPS, 12" ITEM 9123-02

Simple 9v battery for experiments. 12" in length



#### DC MOTOR KIT

These kits allow students to build their own DC motor froom scratch! Includes instructions manual. Requires 1 AA battery (not included).

**3167-10** Spring Type Binding Posts Each **3167-11** With Battery Holder Each



# AIR TRACK APPARATUS COMPLETE \* ITEM AR-700

This device is used to measure uniformly accelerated motion and determine gravitational acceleration. Air is pumped through a hollow track with fine holes; this allows specially fitted air track cars to glide relatively friction-free.

#### Includes:

- Track 47" (1200 mm)
- Single speed air blower
- 3-digit timer
- Complete set includes AR-701, AR-702, AR-703, and AR-704 (See below)



# AIR TRACK ONLY TITEM AR-701

47" (1200 mm) Track only for Air Track Apparatus.



### AIR BLOWER ITEM AR-703

Single speed air blower for Air Track Apparatus.

- A/C adapter
- 110 V



# DIGITAL TIMER WITH PHOTOGATES ITEM AR-702

Digital timer with photogates for Air Track Apparatus.

- A/C adapter
- 110 V



#### DIGITAL TIMER WITH 2 PHOTOGATES ITEM AR-704

Digital timer with 2 photogates. 4 digit display.

• A/C adapter 110 V



# INCLINED PLANE ☐ ITEM 3481-00

Use the Inclined Plane to determine the coefficient of kinematic and static friction, mechanical advantage and efficiency of an inclined plane, etc. It is comprised of a hardwood inclined plane, 24" (600 mm) L x 4" (100 mm) W, fitted with a pulley, 0.88" (22 mm) Dia., mounted at the free end. It is hinged to a horizontal polished wooden base, 18" (450 mm) L x 4" (100 mm) W, which is fitted with an aluminum arc graduated both vertically and angularly. The inclined plane can be fixed at any angle up to 45° or at a suitable height with a metal clamping wingnut.



# LARGE INCLINED PLANE ♣ TIEM 3481-20

Measure forces at work precisely and reliably through fun experiments with this high-quality and versatile inclined plane! It's perfect for experiments involving gravity, acceleration, and forces. The adaptable inclined plane can easily attach to a ring stand and adjust to any height. The inclined plane is made with a sturdy steel construction and is large enough to handle various cars, masses, balls, and other objects. In addition, there is a pulley at the top. Ring stand is not included.

Length 40" (1000 mm) L x 5" (135 mm) W



### LARGE CLEAR ACRYLIC PENDULUM WAVE DEMO \*\* • DITEM 3643-00

Combining physics and art, the pendulum wave demonstration uses kinetic energy to create a beautiful display. Multiple pendulums, with decreasing string lengths, in motion will simultaneously create changing visual patterns that mesmerize as they move in and out of sync with each other. This is a great product for the classroom, as a gift, or as a display piece.

- Includes detailed step-by-step instructions
- Comes in colorful packaging



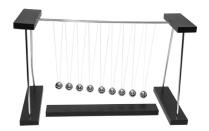
# NEWTON'S SECOND LAW ITEM 3557-00

This item is comprised of a wheel with a center shaft, suspended at 2 ends by a chord and that can be wound manually to the top and released. The unwinding of the chord, as the wheel descends, changes potential energy to kinetic energy. Upon reaching the end, it reverses itself and as it winds back up again, changing kinetic energy back to potential energy. This is a continuous process; however, energy is lost due to friction that ultimately slows the wheel to a stop.



# NEWTON'S APPLES, 6/PK ♠ ► □ ITEM 5146-00

Feel the force of 1 Newton and learn about how scientists measure force. These apples are a useful prop for classrooms. They are great for illustrating the principles of physics. Comes with instructions.



### NEWTON'S CRADLE WITH SILVER BASE ♠ € ITEM 3645-00

This item makes a captivating demonstration for all ages! The Pendulum Wave Demo simulates phases, beats, and frequencies. It features a stand with nine (9) 0.88"" (22 mm) steel ball pendulums and comes with an initiator stick, which helps to simultaneously release all pendulums. When released, the pendulums will swing back and forth to quickly form a wave pattern and then cycle through different phases. This product is great for a classroom, as a gift, or for display.

- Flat packaging
- Assembly required



### NEWTON'S CRADLE WITH SILVER BASE TITEM 3564-00

Our Newton's Cradle got a face-lift! Newton's Cradle is a device that demonstrates conservation of momentum and energy. Pull back 1 or more of the balls and let them drop down. The same number of balls will swing up on the opposite side and the clicking will go back and forth until it stops. Custom made packaging ensures the product arrives tangle-free.

- Packaged in a colorful retail box
- Approx. 0.75" (19 mm) steel balls



### AIR PUCK DITEM 3569-00

Demonstrate Newton's Laws, energy, and momentum with the amazing Air Puck! It's perfectly balanced and glides on a cushion of air for nearly frictionless motion across any smooth surface. Sturdy bumpers will survive collisions with walls, shoes, or other Air Pucks. Requires 4 AA batteries, not included.

CE Certified



# COLLISION IN ONE DIMENSION ITEM 7411-30

This device is used to demonstrate Newton's Third Law of Motion. As one ball moves down the track, observe the change in momentum when it strikes another ball or a group of balls!



#### LOOP-THE-LOOP ITEM 6451-44

This aluminum channel has a loop mounted on a wood base. It is a simple demonstration of conservation of energy. Place the ball at the top of the track, then release it. The ball travels down the track in a loop. Show that the ball will not have enough energy to complete the loop if its initial height is too low.

• Includes 1 steel ball 0.5" (13 mm) Dia.



# FAN CART → □ ITEM 3568-00

This fan cart is ideal for displaying Newton's laws of motion, force, acceleration, and mass in action. This cart is easy to use, making it perfect for demonstration of these principles in any classroom. It comes with a removable sail, to display action-reaction and to control

 Replacement fans available (Item 3568-00-FAN)



#### RING AND DISK MOMENT OF INERTIA APPARATUS ITEM 3479-00

Use this item for studying the dependence of the moment of inertia on the distribution of mass. The product is comprised of a metal ring and a wooden disk of diameter 6" (150 mm), 2" (50 mm) thick and both the same mass.



# NEWTON'S SECOND LAW **●** ITEM 3557-00

This item consists of spring-loaded metal device and 2 steel balls. It demonstrates that a ball released vertically will hit the floor at the same speed of a ball released horizontally.



# VERTICAL ACCELERATION DEMONSTRATOR ITEM 3558-00

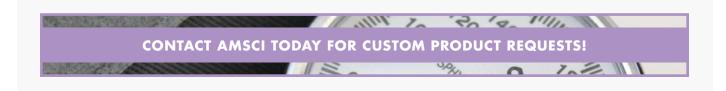
To show that a body launched horizontally will fall vertically at the same rate as a similar freely falling body. Consists of a push button activated spring-loaded launcher with holes for two steel balls 19 mm diameter acting as projectiles.

Replacement Steel Balls (Item 3555-00)



### HALL'S CARRIAGE TITEM 8211-11

This sturdy carriage has a one-piece, high-impact plastic body. The machined aluminum wheels and axles are mounted on hardened steel cone bearings for minimum friction and long life.





#### FREE FALL AND PENDULUM SET WITH TIMER ITEM 3550-60

Measure free-fall acceleration with this set. The timer starts when the electromagnet releases a steel ball and records as the ball passes through 3 photogates. Determine the period of a pendulum as it passes through a single photogate.

#### Set includes:

- · Free-fall stand
- Steel ball
- Pendulum
- 3 photogates
- Digital timer



# DYNAMIC TROLLEY ITEM 3567-00

Very useful in teaching conservation of momentum, acceleration, and more. Spring plunger with 3 positions release for acceleration. Additional weight can also be added to increase mass with the help of the wing nut on top.



### SEISMIC ACCELERATOR ♥ 🖜 🗅 ITEM 7050-00

Explore the Law of the Conservation of Energy with this fun, educational item!

#### Includes:

- Safety goggles
- Extra balls
- Retail packaging



# FRICTION BLOCK 199 ITEM AR-790

Offering four different friction surfaces, the block can be used to teach numerous concepts involving friction, including force and energy, gravity, static friction, and kinetic friction. Comes with a hook on one side.

 Material: sandpaper, vinyl, paper (Cellulose), wood (Steam Beech).



### BALLOON HELICOPTER TEM 7030-00

Effectively illustrate Newton's Third Law with this exciting and simple product. The product allows you to conduct a fun demonstration that's great for younger kids learning about science. It makes a great addition to science classrooms!

#### Includes:

- 1 balloon
- 3 rotor blades
- 1 mouth piece
- 1 blade assembly
- Assorted colors

7030-01 Replacement Balloon Each
7030-02 Balloon Hand Air Pump Each
7030-03 Balloon Helicopter Kit 12/pk



### COIN AND FEATHER DEMO ♠ TIEM 3550-00

This item is great for demonstrating that heavy and light objects fall at the same rate in a vacuum. It is made of a transparent tube 1.5" (38 mm) outer Dia. and 40" (1000 mm) long, with rubber end caps, one of which has a nozzle and stopcock with 14" (355 mm) rubber tubing for connecting to a vacuum pump (not included, catalog Item #6080-00). The demonstration provides an illustration of the principles of gravity that leaves a lasting impression on students. Includes a simulated coin and a feather.



### MAGNETIC LINEAR ACCELERATOR ITEM 3564-10

The device includes powerful rare-earth magnets, steel ball bearings, a  $22\text{cm}\ (8.5'')$  long firing trough, and all the hardware needed to build your own magnetic accelerator.



### WHEEL AND AXLE ITEM 3556-00

For determining the mechanical advantage and demonstrating the principle of conservation of energy. Consists of four-step wooden wheel of 35, 50, 65 and 105 mm diameters fitted with ball bearings, turning on a single, plated steel rod which can be clamped to a support stand using a right angle clamp. Each wheel has a flat groove to accept several turns of a cord with a small hole at each groove for holding a knotted cord. Can be fitted to a support stand with a right-angle clamp (not included). Recommended for use with nylon twine.



# TIPPE TOP, 3/PK **→** □ ITEM 4647-00

These one-of-a-kind tops, called Tippe Tops, have a smooth, mushroom-like shape. The tops will right themselves when pushed onto their sides. When spun, they will rotate and slowly turn themselves upside down to spin onto their 'stems,' due to their offset centers of mass. This seemingly simple 'toy' packs a big scientific punch; use it to explain concepts such as moment of inertia, angular momentum, rotational force, gravity, and friction.

#### Material:

Solid wood, painted



# KNIFE EDGE LEVER CLAMP ITEM 3552-00

Fit standard meter sticks with this clamp to set up a demonstration balance for studying principles of levers, moments, torque etc. It is made of spot-welded steel for durability. The clamp is designed for fastening to meter sticks by means of a knurled set screw and provides easy viewing of the meter stick. Comes with a removable metal wire stirrup which serves as a weight hanger when placed in an inverted position.



#### HOOKE'S LAW SPRING SET ITEM 3638-04



# RATTLEBACK, 10/PK → □ ITEM 9222-23

The Rattleback is a long, thin, half-elliptical shape formed in plastic. It has a slightly offset center of gravity, which causes the Rattleback to spin in a directional rotation of choice, usually counterclockwise. If you attempt to spin the Rattleback in the clockwise direction, strong preference will cause the Rattleback to "rattle" back and forth after few rotations, stopping and then reversing the rotation back to the preferred counterclockwise direction. The directional preference is so strong that if the Rattleback is at a standstill and you push down on 1 end, it will begin turning.

- Assorted colors
- Blue only also available (Item 9222-23-B)



### ARCH (ROMAN BRIDGE) ITEM 3483-00

Ingenuity and architectural brilliance inspired the ancient romans to incorporate form and function in to their designs. Arches allowed aqueducts to flow freely and provide sufficient water for growing cities. This large block set allows children to use and learn the same relevant engineering principles create by this ancient civilization.



### PENDULUM BOB ITEM 3497-02

For various applications in physics laboratory. A cast iron ball of 79mm diameter with two hooks on opposite ends. Enamel finish.



### PULLEY STUDENT SET ITEM 3472-10

Similar to our Pulley Demonstration Set 3472-05. Comprised of a rectangular laminated wooden base approx  $5^{\prime\prime}$ x6 $^{\prime\prime}$  (125 x 150 mm) which supports a threaded rod measuring about  $1/2^{\prime\prime}$ x24 $^{\prime\prime}$  (12.5 x 610 mm) in a metal flange, fitted with a capstan and a screw eye. Six clamps (hook collars) are provided for suspending pulleys and cords on an adjustable cross rod approx  $3/8^{\prime\prime}$  x  $8^{\prime\prime}$  (9.5 x 200 mm), held by a right-angle clamp. Rods, pulley and clamps are made of either plated metal or polished aluminum. Slotted weights and weight hangers are made of nickel plated steel.

#### Supplied with:

- 8 single pulleys
- 2 double sheave pulleys
- 1 wheel and axle
- 7 weight hangers (5 of 50 g, 1 each of 10 g, and 20 g)
- 6 slotted weights (1 of 10 g, 2 of 20 g, 1 of 100 g, 1 of 500 g, and 1 of 1000 g)
- 1 right-angle clamp
- 1 spool of cord
- 1 tommy bar to tighten the vertical rod
- · Comes with an instruction manual.



### PULLEY WITH ROD ITEM 3466-00

Use this item for applications where a pulley is to be supported at various heights and angles. It is especially suited for the inclined plane experiment. A plastic pulley, 2" (50 mm) Dia., is mounted on a metal frame attached to a plated rod about 0.38" (10 mm) Dia. and 6" (150 mm) long.



# PULLEY WITH TABLE CLAMP ITEM 3467-00

This item is useful for experiments in which a pulley needs to be supported at various heights and angles. The pulley can be removed and used separately. It is designed for clamping to table edges up to 1.75" (45 mm) thick with a thumbscrew, and for supporting a 2" (50 mm) Dia. pulley and rod. The pulley adjusts to 4" (100 mm) height (min.) and rotates a full 360°.



#### **PULLEYS, ALUMINUM**

Pulleys with deep v-grooves are balanced for free movement. Mounted on aluminum frame.

3474-01	Single	Each
3474-02	Double Parallel	Each
3474-03	Triple Parallel	Each
3474-14	Tandem Double	Each



### PULLEY FOR FORCE TABLE ITEM 3462-11

This item is a spare pulley for a force table.



# SINGLE PLASTIC PULLEY ITEM 3470-01

This Single Plastic Pulley is made of rigid, colored plastic with deep V-grooves. It is balanced for free movement. Each pulley is about 50 mm in Dia. and is mounted in parallel mode on an aluminum strip with hooks at both ends.

Individually packed



### DOUBLE PLASTIC PULLEY ITEM 3470-02

This Double Plastic Pulley is made of rigid, colored plastic with deep V-grooves. It is balanced for free movement. Each pulley is about 50 mm in Dia. and is mounted in parallel mode on an aluminum strip with hooks at both ends.

· Individually packed



### PULLEY, PLASTIC, TRIPLE ITEM 3470-03

Made of rigid colored plastic with deep v-grooves. Balanced for free movement. Pulleys are about 50mm in diameter and are mounted in parallel mode on aluminum strips with hooks at both ends.

· Individually packed



## PULLEY, PLASTIC, QUADRUPLE ITEM 3470-04

These pulleys are made of rigid, colored plastic with deep v-shaped grooves. They're balanced for free movement and mounted in parallel mode on aluminum strips. Hooks can be found at both ends of each pulley.

- Individually packed
- 50 mm Dia.



## PULLEY, PLASTIC, DOUBLE ITEM 3470-05

Made of rigid colored plastic with deep v-grooves. Balanced for free movement. Pulleys are about 50 mm and 37 mm in diameter and are mounted in tandem mode on aluminum strips with hooks at both ends

Individually packed



## PULLEY PLASTIC TANDEM TRIPLE ITEM 3470-06

Made of rigid colored plastic with deep v-grooves. Balanced for free movement. Pulleys are about 50 mm, 37 mm and 25 mm in diameter and are mounted in tandem mode on aluminum strips with hooks at both ends.

· Individually packed



# PULLEY FIXED FOR MOUNTING ON PLANE SURFACE ITEM 3464-00



## COLLISION BALLS TITEM 3484-38

These colliding steel spheres will help demonstrate the Law of Conservation of Energy, and show students how mechanical systems convert energy to heat. These steel spheres are a fantastic way to show kids how energy "loss" is actually energy being released as heat!







#### **SOLID BALL**

Use these products for physics experiments and demonstrations involving density and volume.

See below for material and size availability

3484-01	Aluminum 3/4"	Each
3484-02	Brass, 3/4"	Each
3484-03	Copper, 3/4"	Each
3484-20	Steel, 3/8"	Each
3484-22	Brass, 1"	Each
3484-23	Copper, 1"	Each
3484-24	Steel, 1"	Each
3484-25	Lead, 1"	Each
3484-26	Zinc, 1"	Each
3484-28	Steel, 15/16"	Each
3484-34	Steel, 0.75"	Each
3484-46	Steel, 0.5"	6/pk
3488-78	Steel, 7/8"	Each
3484-85	Steel, 0.63"	Each
3484-10	19 mm	14/set
3484-30	25 mm	14/set

Use these durable metal balls for physics experiments and demonstrations involving density and volume.





#### BALLS, HOOKED, 25 MM, SPARE

3486-21	Aluminum	Each
3486-22	Brass	Each
3486-23	Copper	Each
3486-24	Iron (Steel)	Each
3486-25	Lead	Each
3486-26	Zinc	Each

Use these drilled balls for density and volume measurements, pendulum bob, potential energy and conservation experiments, ballistics, and more.





## BALLS, DRILLED, 19 MM, SPARE

3486-03	Copper	Each
3488-01	Aluminum	Each
3488-02	Brass	Each
3488-04	Steel	Each



#### BALLS, DRILLED, 25 MM, SPARE

3488-21	Aluminum	Each
3488-22	Brass	Each
3488-23	Copper	Each
3488-24	Steel	Each
3488-25	Lead	Each
3488-26	Zinc	Each



## GAS CONVECTION APPARATUS **●** ■ ITEM 3210-01

This item is also known as a Convection Box or a Ventilation Apparatus. Use it for demonstrating the phenomenon of convection in air and the principle of room ventilation.

#### Includes:

- 2 candles
- Enameled metal box 4" (100 mm) W x 8" (200 mm) L x 4" (100 mm) H



## THERMOELECTRIC GENERATOR DEMONSTRATOR • DITEM 1000-12

Bring the 2nd Law of Thermodynamics to life using this device that can act as a refrigerator or a heat engine. Immerse the 2 aluminum legs in baths of different temperatures and produce electrical energy that turns the turbine! Unplug the banana jacks and measure the voltage output with a multimeter.

Includes 2 cups



## LIQUID CONVECTION APPARATUS TIEM 3205-00

Use this device to demonstrate the phenomenon of thermal convection in liquids caused by temperature variation. It consists of a rectangular-shaped borosilicate glass tube, 6" (150 mm) W x 8.25" (150 mm) H, with a funnel-shaped opening at the top for filling liquids.



## STIRLING GENERATOR ● ■ ITEM 1000-14

Students observe firsthand the conversion of heat into mechanical and electrical energy – thermodynamics: heat to power! The model features a safely secured fuel source in a recessed well on a finished wooden base. Alcohol is not included.

#### Includes:

- Spare cylinders (1 each)
- · Crankshaft pin
- Cylinder O-ring
- Allen wrenches for removing damaged cylinders
- Fully-assembled
- 7" L x 3.5" W x 3.5" H

1000-14BBurner OnlyEach1000-14CClosed Glass Cylinder OnlyEach1000-14-C2Open Glass Cylinder OnlyEach



## RADIATION CANS 3/SET \*\* ITEM AR-725

These radiation cans are useful for demonstrating solar energy and heat transfer. Just add water and a thermometer (our Item 9101-00 thermometer works great!) to each of the 3 cans, place in the sun or near a bright light bulb, and watch the temperatures rise. The cans are finished with silver, black, and white exteriors. Caps do not have holes.

• 2.5" Dia. x 9" H (with stopper)



## RING AND BALL APPARATUS ♥ ITEM 3226-00

This apparatus consists of 2 brass rods with insulated handles. One of the rods has a ring and the other has a ball of approximate diameter  $1^{\prime\prime}$  (25 mm), attached at the end. The brass ball passes through the ring when both are at room temperature, but when the ball is heated it expands and cannot pass through the ring, demonstrating the expansion and contraction of metals.



## COMPOUND BAR / STRIP TITEM 3230-00

Use this bar to demonstrate unequal expansion in different metals on heating. It consists of a laminated strip of 2 different metals fitted in a plastic handle.

Strip is approx. 8" (200 mm) L x 0.38" (10 mm) W



## ELECTRIC CALORIMETER ITEM 3237-00

Help students determine the electrical equivalent of heat with this versatile double-walled calorimeter can be used with or without the electric heating element. Reservoir has 150 ml capacity and has a built-in thermometer cork.

• Size: 4" diameter x 4" high (105x100 mm)



## CALORIMETER 2/SET TITEM 3235-00

Use the Calorimeter for determining specific heat, heat of fusion, and heat of vaporization. The thermometer is not included.

## Includes:

- · Plastic ring for seating the inner calorimeter
- Stirrer
- · Plastic lid for outer vessel



#### SPECIFIC HEAT SPECIMEN CYLINDERS 13MM, 6/SET ITEM 3242-00

Includes six cylinders made of aluminum, brass, copper, iron, lead, and zinc having diameters of 13mm. The length of each cylinder is adjusted so that all of them have the same mass of approx 100g.





## FIRE SYRINGE **→** □ ITEM 1522-00

This explosive demonstration is great for discussing adiabatic compression (rapid compression that raises air temperature) in diesel engines, Ideal Gas Laws, the laws of thermodynamics, and the resourcefulness of ancient people. As air compresses, the temperature increases and combustible material bursts into flames. It's a simple experiment that students are sure to remember!



## LINEAR EXPANSION APPARATUS (ECONOMY) ITEM 6454-87

Ideal for younger students. Economically and accurately determines the coefficient of expansion of various metals. Has an easy to read scale, calibrated in millimeters and supplied with three different expansion rods. It shows heat expansion and cold contraction.



## RADIATION CANS 2/SET ITEM 1561-00

These radiation cans are useful for demonstrating solar energy and heat transfer. Just add water and a thermometer to each of the 2 cans, place them in the sun or near a bright light bulb, and watch the temperatures rise. Includes 1 silver and black can.

• 84 mm Dia. x 75 mm H

## NEED HELP FINDING THE RIGHT PRODUCTS?

CONTACT YOUR AMSCI REPRESENTATIVE



#### HAND BOILER

This is a classic example of thermodynamics in action! The heat of your hand warms the bottom bubble, causing the air in the Hand Boiler to expand. Liquid is forced into the top bubble, making it appear to boil for an exciting demonstration!

2010-10 Vertical Hand Boiler Each2010-20 Horizontal Hand Boiler Each



## LESLIE'S CUBE WITH ACCESSORIES TIEM 3030-11

This product is comprised of a tinplate box with 3" (75 mm) sides; the vertical faces of the box are blackened, roughened, varnished, and polished, respectively. The top opening is 1" (25 mm) Dia. The apparatus is filled with water maintained at boiling point by a low Bunsen flame. A thermopile and a galvanometer can then be used to compare the relative output of radiant heat from each of the 4 faces. Care should be exercised to prevent radiation from reaching the thermopile directly from the flame.

## **AMSCI FAVORITE**



## DRINKING BIRD TITEM 7010-10

This Drinking Bird works using properties of thermodynamics, converting thermal energy into mechanical energy. Fluid inside condenses from the evaporative cooling of the water off the bird's beak, making it top-heavy and dunking it back into the water.

- Assorted colors
- Adult supervision required



## LIQUID EXPANSION BULB ITEM 3256-00

For demonstrating and determining the coefficient of volume expansion of liquids when heated. Consists of a borosilicate glass bulb to hold 10ml of a liquid, in a capillary stem with a funnel at the top.





The Galileo thermometer consists of a sealed glass tube that is filled with water and several floating bubbles. The bubbles are glass spheres filled with a colored liquid. Attached to each bubble is a little metal tag that indicates the temperature (Fahrenheit) - a beautiful way to demonstrate pressure and fluid principles!

Approx. 13" (330 mm) H

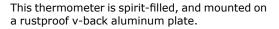
ROOM THERMOMETER WITH FLAT METAL BACK, CELSIUS / FAHRENHEIT ITEM 1202-01



This thermometer is spirit-filled, and mounted on a rustproof aluminum plate. The thermometer has a dual scale: -30° to 230°F x 1°F and -30° to 110°C x 1°C division. Please note this thermometer is not resistant to chemicals.

• 6.5" (165 mm) L x 1" (25 mm) W.

ROOM THERMOMETER WITH V SHAPE METAL BACK



**1203-11** C / F Each **1203-11C** Celsius Only Each



## THERMOMETER, WALL, DUAL SCALE ECONOMY ITEM 1203-12

This thermometer is for classroom or outdoor use.  $6.5^{\prime\prime}$  L x  $2^{\prime\prime}$  W.

#### THERMOMETER, TOTAL IMMERSION

Use these total immersion alcohol thermometers in the classroom. They are useful for measuring the temperature of liquids in Celsius. The thermometer s have contrasting colors for easy readability.

1203-13	-20 / 110C, 12"	Each
1203-14	-20 / 150C, 12"	Each
1203-16	-20 / 150C, 0 / 300F, 12"	Each
1203-20	-20 / 110C, 0 / 230F, 12"	Each
9102-00	-10 / 110C, 6"	Each

# 1203-15 -20 / 110C, 12" Each 1203-17 -20 / 110C, 0 / 230F, 12" Each 1203-18 -20 / 150C, 0 / 300F, 12" Each 1203-19 -10 / 150C, 12" Each 9101-00 -20 / 110 C, 0 / 230 F, 6" Each

s have contrasting colors for easy readability.

THERMOMETER, PARTIAL IMMERSION

Use these partial immersion alcohol thermometers

in the classroom. They are useful for measuring the

temperature of liquids in Celsius. The thermometer



## DIGITAL INSTANT READ THERMOMETER C/F ITEM 1230-00

This Digital Instant Read Thermometer has a large viewing display (24 mm x 11 mm) for clear viewing. It is designed in a convenient pen style with a protective sheath. Simple and quick to use, it is a fantastic staple for laboratories.

- On/off and F'/C' switches
- Scale -50-392°F/-45-200°C
- Uses 1 x 1.5 v LR44 battery



# DIGITAL INSTANT READ THERMOMETER, CELSIUS / FAHRENHEIT (LONG STEM) ITEM 1230-12

This digital instant read thermometer is perfect for lab use. The stainless steel probe is resistant to most laboratory chemicals. Switch between Fahrenheit and Celsius with the push of a button. Range is -50°C to 300°C.

- On/Off switch preserves battery life when not in use
- Requires 1 x 1.5 V button battery (included)
  - CE Certification



## NITINOL MEMORY WIRE SPRING COIL ITEM 1001-18-S

Standard transition temperature is very hot tap water or 45°C/113°F (Metal changes phases around 45°C).

- Spring Coil inner diameter: 20 mm
- Pitch: 1 mm (spacing between loops)
- Approx. height of coiled spring 0.5"



## NITINOL MEMORY WIRE, STRAIGHT 🦃 🐞 🗅

This crystalline metal changes phase around 75°C. .5 mm Dia.

1001-01	1" (304 mm)	Each
1001-01-30	1" (304 mm)	30/pk
1001-05	5" (1524 mm)	Each
1001-10	10" (3048 mm)	Each
1001-50	50" (15240 mm)	Each





## VIBRATION DEMONSTRATION KIT ♥ ■ ITEM 8410-00S

This Sine Wave Generator and Wave Driver can be used together. As a kit, they form the Vibration Demonstration Kit, which shows sine waves as they travel across a medium. Chladni plates provide an illustration of the modes of vibration of solids.

#### Kit Includes:

- Wave Driver (Item 8420-00)
- Wave Generator (Item 8410-00 110V, Item 8415-00 110v-220v)
- Chladni Plates Kit (Item 8430-04)
- Banana Plugs
- Wave Driver Accessories Kit (8430-01-10, see below)
- Sand & Sand Shakers (Item 8430-07)
- Allen Key & Holder (8430-01-10, see below)

#### Sine Wave Generator:

- Power supply 1 A max.
- 110 V
- 60 Hz

## Wave Driver:

- Power: 1 A
- 3.91" Dia. x 3.03" H







## HOLDERS AND ALLEN KEY ITEM 8430-06

Use these holders to attach accessories like.

## A. LONGITUDINAL WAVE SPRING KIT ITEM 8430-01

Connect the spring to see longitudinal waves in action!

## B. RESONANCE WIRE LOOP KIT ITEM 8430-02

Use it to illustrate the patterns of standing waves.

## C. LONGITUDINAL WAVE CORD KIT ITEM 8430-03

Use the elastic cord to see longitudinal waves in action!

## D. METAL RESONANCE STRIPS ITEM 8430-05

Illustrates the principles of resonant modes. Since they are different lengths, the strips will noticeably oscillate at different frequencies.

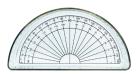


#### RESONANCE BOWL (CHINESE SPOUTING BOWL) ● □ ITEM 6579-00

Use the Resonance Bowl to demonstrate the behavior of waves and their interactions. Vibrations made by rubbing the bowl's handles causes the water surface to ripple around the rim. Soon, water drops shoot up, quickly becoming continuous streams like tiny fountain jets.

**6579-10** Mat For The Resonance Bowl Each





#### REFRACTION CUP 🍎

These semicircular plastic cells are perfect for observing the refractive properties of liquids such as water, oil, alcohol, and other transparent liquids. They are a useful tool in classrooms for demonstrations and experiments. The refraction cups are made of a clear, durable plastic.

3350-01	Refraction Cup	Each
3350-20	Refraction Cup w/ measurements	Each



#### SINGING RODS 2/SET #9 🍎 ITEM 3637-00

These rods are a must for explorations involving sound waves. They provide an easy way to demonstrate longitudinal waves, and show how they differ from transverse waves. The rods are also ideal for teaching about nodes and anti-nodes in standing waves. Includes a bag of crushed rosin



#### **NEWTON'S RING APPARATUS** ITEM 3370-00

For studying interference fringes due to sunlight or monochromatic light. Consist of a plano-convex lens, diameter 60 mm, and an optically polished (worked) flat glass plate mounted on a ring metal pressure frame with three compression adjusting screws.



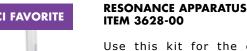
## LASER OPTICAL DISC SET 49 & ITEM 5133-00

Use this complete optics set for impressive demonstrations. This kit uses a compact yet powerful Laser Ray Box, which has bright and well-defined rays perfect for classroom use. The Laser Ray Box projects 1, 3, or 5 parallel laser beams onto any flat surface ideal for optical ray viewing and analysis. It includes everything needed to demonstrate the basic principles of geometrical optics. A convenient, impact-resistant, foam-lined black carrying case keeps everything organized and ready to use.

Tuning Fork Required (Not Included)







Use this kit for the experimental determination of the wave length and velocity of sound in air by locating resonance positions of an air column. The kit consists of a graduated neutral glass tube connected to an aluminum water reservoir by rubber tubing and a pinch cock.

#### Adjustable Reservoir



## Includes:

- Concave lens
- Convex lens
- Parallel flat or parallel bar
- Trapezoid prism
- Right angle lens
- Mirror
- Hollow semicircle
- Frosted semicircle
- Magnetic activity mat (15" (381 mm) L x 8.25" (210 mm) W with printed scales and angles
- Laser light beam chart
- The Ray Box is powered by an AC adapter (included)

5133-01A	Power Supply Adapter	Each
5133-01-AUK	3-Pin UK Adapter	Each
5133-01L	Laser Only	Each
5133-03	Case Only	Each



## MINI RIPPLE TANK **♠** ■ ITEM 3338-01

This apparatus provides a compact and elegant method of showing the wave phenomena of diffraction, refraction, reflection, and interference, with none of the usual problems. The tank is supported on a base which provides the wave generator and lighting. Images of the water waves produced are projected upwards onto a frosted screen, which is viewed from above. The wave frequency can be varied, giving wavelengths in the tank ranging from several cm to a few mm.

#### Specifications:

- 4" (100 mm) square
- · Base that provides the wave
- 3 Acrylic shapes for refraction
- 3 Aluminum plates for reflection
- 3 Dippers for plane and circular
- Wave generation
- Full instructions
- Power adapter, 110-240v



## LASER REFRACTION TANK WITH GEOMETRIC OPTICS TEM 6332-00

This self-contained unit allows students to measure and study light refraction. The angle of incident and refractive rays are readily seen with the help of a built-in laser as its light source. Add water up to the tank's mid-line to create a surface that precisely transmits and reflects the laser beam for student observations. The laser revolves around the circular graduated scale and can be set at any point. Students can observe light rays as they travel from air into water, water into air, and water into water. Detach the apparatus from the tank to perform refraction and reflection experiments with the included prisms and mirrors. Comes with instructions.

### Includes:

- 4 prisms
- 2 mirrors
- Laser
- Circular scale is 6.38" (162 mm) Dia.



# LASER REFRACTION TANK WITH LASER AND BATTERIES → □ ITEM 6330-00

Use this self-contained unit to measure and study the refraction of light. Incident and refractive rays are easily seen and measured by using this product. Refraction of light can be studied with the help of a built-in laser as a light source which revolves and can be fixed at any point around a circular graduated scale. The unit is made with leveling screws to level the water in the tank.

- Requires (1) LR44 button battery (included)
- 6.75" (17.1 cm) W x 5.5" (13.9 cm) D x 10" (25.4 cm) H
- Capacity: 400 ml



## ACRYLIC LENS AND PRISM, 7/SET **●** ITEM 3358-20

This set contains 7 different lenses and prisms to demonstrate a wide range of optical principles. The frosted surfaces are also excellent for revealing the path of light as it passes through the lens. They are a great tool for teaching students about optics.

- Comes in cardboard box
- 2.75" (70mm) L x 1" (25 mm) thick



#### ACCESSORIES FOR OPTICAL DISK HARTL, SET/7, WOODEN BOX ITEM 3358-05

Includes 7 glass lenses/prisms. Frosted faces.

- Thickness 10 mm.
- 2.75" (70mm) L x 1" (25 mm) thick

## NEED HELP FINDING THE RIGHT PRODUCTS?

CONTACT YOUR AMSCI REPRESENTATIVE



## OPTICAL BLOCK SET, ACRYLIC ITEM 3354-03

Demonstrate the principles of reflection and refraction with this affordable optical block set. The set includes 3 well-made glass blocks in 3 shapes: trapezoidal, semicircular, and double convex. When light passes through the trapezoidal block, it is refracted at each boundary between glass and air. Both refraction and reflection can easily be seen using the semicircular block. Shine three light rays through the convex lens to show how they converge at the focal point and then calculate focal length. Purchase one for classroom demonstration or multiple sets for students to study in groups!





#### **ACRYLIC LENSES**

These acrylic lenses have a bottom surface that is frosted.

**3352-01** Bi Convex Each **3352-02** Bi Concave Each



#### GIANT PRISM 199 ITEM AR-520

This equilateral prism makes bright rainbows from sunlight or an artificial source like an overhead projector. The principles of refraction are clearly and simply illustrated.

4" (100 mm) L x 3" (75 mm) W





#### **OPTICAL GLASS RIGHT ANGLE PRISMS**

Use this prism for measuring critical angles and observing total internal reflection. The principles of refraction are clearly and simply illustrated.

- Made of clear optical glass
- Angles 90°, 45°, 45°

**3334-02** 1.38" x 1" (35 mm x 25 mm) L Each **3334-04** 1.38" x 2" (35 mm x 50 mm) L Each





#### **ACRYLIC EQUILATERAL PRISMS**

Use these prisms for experiments on wavelength separation applications. They offer eye-catching demonstrations for students. The principles of refraction are clearly and simply illustrated.

3328-01	1" x 1" (25mm x 25mm)	Each
3328-02	1" x 2" (25 x 50mm)	Each
3328-03	3" x 1" (75 mm x 25 mm)	Each
3328-04	4" x 1" (100 mm x 25 mm)	Each
3328-06	6" x 1" (150 mm x 25 mm)	Each





#### **OPTICAL GLASS EQUILATERAL PRISMS**

Use these prisms for experiments demonstrating wavelength separation applications. The prisms are made of very high-quality clear optical glass.

2" x 1" (50 mm x 25 mm)	Each
3" x 1" (75 mm x 25 mm)	Each
3" x 1" (75 mm x 25 mm)	Each
4" x 1" (100 mm x 25 mm)	Each
3" x 3/8" (75mm x 10mm)	Each
	2" x 1" (50 mm x 25 mm) 3" x 1" (75 mm x 25 mm) 3" x 1" (75 mm x 25 mm) 4" x 1" (100 mm x 25 mm) 3" x 3/8" (75mm x 10mm)



#### PRISMS, ACRYLIC, EQUILATERAL TRIANGLE, 75 X 25 MM ITEM 3342-04

This triangle prism can be used for index of refraction experiments. It is made of durable acrylic.



## ACRYLIC PRISM, TRAPEZOIDAL ITEM 3351-02

For studying the laws of optics. Made of 15 mm thick and 32 mm wide with two parallel sides 90 mm and 40 mm long at angles of 45 and 60 degrees. One large surface is frosted enabling to follow the path of light.



# GLASS SEMICIRCULAR BLOCK 3-1/2"X1/2" ITEM 3353-01

Made of Glass. Diameter 3-1/2'' and thickness 1/2'' (90 x 12 mm).



#### A. ACRYLIC CYLINDER ITEM 3517-00

## B. ACRYLIC BALL C. ACRYLIC CUBE ITEM 3516-00 ITEM 3515-00

• 1" X 1"

• 1" X 1"

1" X 1"



#### CYLINDRICAL LENSES, GLASS

To focus light along a straight line. Useful for looking at full paths of rays on paper, such as pencils of light emerging from the slits of a comb illuminated by a small lamp. Made of optically true glass with polished faces and ground edges. Surfaces follow the sides of cylinder(s). Beveled edges.

3318-01	Bi-Convex	Each
3318-02	Bi-Concave	Each
3318-12	Power 14D Bi Concave	Each
3318-13	Power 14D Plano Convex	Each
3318-14	Power 14D Plano Concave	Each



## NEUTRALIZING LENS SET, GLASS ITEM 3315-00

Comprised of one each of biconcave and biconvex lens, 38 mm in dia. And 15.5 cm focal length, which when used together neutralize each other, the resulting effect being that of a plane glass.





## CONCAVE/CONVEX MIRROR SET/6, 50MM ITEM AR-726

This set is perfect for student explorations of mirror optics. 6 different 50 mm Dia, spherical glass mirrors, each with a protective silver coating, are packed in a lined storage box. Individual boxes may vary. The set includes a concave and a convex mirror with focal lengths of 10 cm, 20 cm, and 50 cm.





#### **GLASS LENS DEMONSTRATION**

This set is for showing the most important types of lenses. They are optically true with ground glass edges. Lenses are arranged in a foam-lined wooden box

**3313-01W** 1.5" (38 mm) Dia. 6/set **3313-02** 2" (50 mm) Dia. 6/set **3313-02W** 2" (50 mm) Dia. 6/set





## LENSES SPHERICAL, UNMOUNTED BI-CONVEX

Bi-convex lenses are used as magnifying or condensing lenses, with two outward curving symmetrical faces. This lens is made of polished glass with ground edges. It provides a convenient way to illustrate the properties of lenses to students.

3305-02	1 1/2" x 4" (38 mm x 100 mm)	Each
3305-04	1 1/2" x 6" (38 mm x 150 mm)	Each
3305-05	1 1/2" x 8" (38 mm x 200 mm)	Each
3305-07	1 1/2" x 12" (38 mm x 300 mm)	Each
3305-08	1 1/2" x 20" (38 mm x 500 mm)	Each
3305-21	2" x 2" (50 mm x 50 mm)	Each
3305-22	2" x 4" (50 mm x 100 mm)	Each
3305-24	2" x 6" (50 mm x 150 mm)	Each
3305-25	2" x 8" (50 mm x 200 mm)	Each
3305-28	2" x 20" (50 mm x 500 mm)	Each
3305-41	3" x 6" (75 mm x 150 mm)	Each
3305-45	3' x 8" (75 mm x 200 mm)	Each





#### LENSES SPHERICAL, UNMOUNTED BI-CONCAVE

Bi-concave lenses are used for reducing the size or spreading light with two inward curving symmetrical faces. This lens is made of polished glass with ground edges. It provides a convenient way to illustrate the properties of lenses to students.

3309-02	1 1/2" x 4" (38 mm x 100 mm)	Each
3309-04	1 1/2" x 6" (38 mm x 150 mm)	Each
3309-07	1 1/2" x 12" (38 mm x 300 mm)	Each
3309-08	1 1/2" x 20" (38 mm x 500 mm)	Each
3309-22	2" x 4" (50 mm x 100 mm)	Each
3309-24	2" x 6" (50 mm x 150 mm)	Each
3309-25	2" x 8" (50 mm x 200 mm)	Each
3309-28	2" x 20" (50 mm x 500 mm)	Each
3309-45	3' x 8" (75 mm x 200 mm)	Each



# MIRROR FLAT STRIPS SILVERED GLASS UNMOUNTED 75 X 75MM ITEM 3366-04

Verify the laws of reflection and conduct other experiments in optics with this product.



## MIRROR ACRYLIC, 3.5 X 2.5, 8/PK ITEM FRE-12

Use these mirrors to illustrate the principles of reflection to students. Their small size means they are easy to handle and manipulate.



## **OPTICAL CONCAVE GLASS SPHERICAL MIRRORS**

This spherically concave mirror is made of optically true glass with protected silver coating. Use it in basic experiments and demonstrations in optics. It is a quick and easy way to teach students about the behavior of concave/convex mirrors.

3360-21	2" Dia. x 10" fl (50 mm x 250 mm)	Each
3360-22	2" Dia. x 15" fl (50 mm x 380 mm)	Each
3360-23	2" Dia. x 20" fl (50 mm x 500 mm)	Each
3360-24	2" Dia. x 10" fl (50 mm x 250 mm)	Each
3360-27	2" Dia. x 100" fl (50 mm x 2500 mm)	Each



#### **OPTICAL CONVEX GLASS SPHERICAL MIRRORS**

This spherically convex mirror is made of optically true glass with protected silver coating. Use it in basic experiments and demonstrations in optics. It is a quick and easy way to teach students about the behavior of concave/convex mirrors.

3362-21	2" Dia. x 10" fl (50 mm x 250 mm)	Each
3362-22	2" Dia. x 15" fl (50 mm x 380 mm)	Each
3362-23	2" Dia. x 20" fl (50 mm x 500 mm)	Each
3362-24	2" Dia. x 10" fl (50 mm x 250 mm)	Each
3362-27	2" Dia. x 100" fl (50 mm x 2500 mm)	Each
3362-43	3" Dia. x 10" fl (75 mm x 250 mm)	Each
3362-44	3" Dia. x 25" fl (75 mm x 635 mm)	Each



## **PLASTIC MIRROR**

These high-quality plastic mirrors are optimal for young student applications. They are durable and just right for mirror writing, periscopes, and other experiments. These mirrors allow for a simple way to illustrate the principles of reflection.

3240-01	3" x 4" (75 mm x 100 mm)	Each
3240-02	4" x 4" (100 mm x 100 mm)	Each
3240-03	5" x 7" (125 mm x 180 mm)	Each
3240-04	8" x 10" (200 mm x 250 mm)	Each
3240-05	9" x 1.63" (230 mm x 41 mm)	Each
3240-06	5" x 3" (125 mm x 75 mm)	Each



# GLASS SPHERICAL CONVEX/CONCAVE MIRRORS 3" DIA X 8" FL ITEM 3364-01

This two-sided mirror is convex on one side and concave on the other. Its design allows for a quick comparison of these two types of mirrors. It is a useful tool for illustrating these principles to students.

- Dia. 3" (75 mm)
- 8" (200 mm) focal length



## INFINITY MIRROR ♦ ♠ □ ITEM 3361-00

If you've ever stood between 2 mirrors facing each other, like in a hair salon, you're familiar with the seemingly endless line of images seen in the mirrors. The Infinity Mirror recreates this effect. It is just like an ordinary mirror when the built-in mirror lights are off, and the room lights are on. However, with the mirror lights turned on in a darkened room, the effects change dramatically! This is a highly effective way to teach the law of reflection and capture students' excitement about light and optics. Comes with a fixed power cord with switch, approx. 5 ft in length.

3361-00B Replacement Bulb Only 2/pk



## LASER POINTER, GREEN TITEM 5134-005

This handy, pen-sized Green Laser Pointer has a push-button that turns it on and off. Use it in a multitude of group experiments.

Output power: <5 mW</li>Wavelength: 532 nm

Class IIIa



## LASER POINTER, RED TITEM 5135-00

This handy, pen-sized Red Laser Pointer has a push-button that turns it on and off. Use it in a multitude of group experiments.

Output power: <5 mW</li>Wavelength: 630-650 nm

Class IIIa



## LASER POINTER, BLUE ITEM 5134-10

This handy, pen-sized Blue Laser Pointer has a push-button that turns it on and off.

Output power: <5 mW</li>Wavelength: 405 nm

Class IIIa



**AMSCI FAVORITE** 

#### 

This power supply is specially designed to safely run spectrum discharge tubes of length approximately 10.25" (260 mm). It is encased in a metal body and the device is spring-loaded with clips to connect the tubes securely.

Dual voltage (110v/220v), CE/ROHS certified

3376-00D With US Plug Each
3376-00D-AUK UK Adapter Only Each
3376-00D-AUS With AU Adapter Each
3376-00D-UK With UK Adapter Each



#### SPECTRUM DISCHARGE TUBES .

Use these tubes to show spectral lines of pure substances. These are glass tubes approximately 10.25'' (260 mm) long, central capillary portion approximately 3.5'' (90 mm) to 4'' (100 mm) long, with electrodes sealed at both ends and connected to lead wires protected by metal caps. The tubes offer an exciting illustration of spectral lines.

- The tube needs an induction coil 2" (50 mm) spark, or a suitable transformer like our power supply Item #3376-00D
- · Length of capillary portion can be varied as required
- These cannot be used as lamps
- For intermittent use

3376-01	Air (Air) - Pink	Each
3376-02	Argon Gas - Violet	Each
3376-03	Carbon Dioxide - Faint Blue	Each
3376-04	Chlorine - Blue-Green	Each
3376-05	Helium - Orange	Each
3376-06	Hydrogen - Magenta	Each
3376-08	Krypton Gas - Green	Each
3376-09	Mercury Gas - Light Blue-Green	Each
3376-10	Neon Gas - Red	Each
3376-11	Nitrogen Gas - Yellow-Orange	Each
3376-12	Oxygen - Lavender	Each
3376-13	Water Vapor - Dark Pink	Each
3376-14	Xenon - Blue	Each
3376-16	Deuterium - Purple	Fach



## ADVANCED SPECTROMETER → □ ITEM 3381-00

Use our Spectrometer for introducing students to principal types of spectra and determination of the wavelength and frequency of emitted light. It can also be used for quantitative spectrometric measurement of angle of prism and refractive index of the prism material. It is similar to a Student Spectrometer but it has enhanced features for obtaining better quantitative results. The Spectrometer consists of a heavy cast base and a pillar for collimator support. Includes a magnifying eye glass to read the vernier, tommy bar for axis adjustment, and flannel cloth. Supplied in a wooden box

**3381-10** Advanced Spectrometer w/ Diffraction Grating and Ri Prism



# SPECTROSCOPE, DIRECT VISION, WOODEN BOX • ITEM 3372-00

Use the Spectroscope for quantitative examination of the spectral composition of white light and radiant bodies. It is comprised of a metal draw-out tube of 0.75" (20 mm) Dia. with an adjustable slit at one end. Fully drawn out 5" (130 mm)



## LED ARRAY **♠** ■ ITEM 3559-90

The LED Array is a fun and attractive way to show students the diffraction patterns of colors through use of 11 vertically mounted LED lights in different that can be switched on individually or all at once by turning a rotary switch on top of the LED array.

Uses a 110 V adapter



## COLOR PADDLES, 18/SET TEM 9994-18

Demonstrate the principles of color mixing with this set of 18 clear, colored plastic paddles.

· 3 packs of 6 colors



# STROBOSCOPE, HAND DRIVEN, SIMPLE MODEL ITEM 3374-00

For optically slowing or completely stopping any object in motion and for measuring the frequency of periodic motion. Consists of a black metal disk of 250mm diameter with 12 evenly spaced radial slits extending to its edge.



## COLOR MIXING DEMO TITEM 3559-00

This unit is a self-contained demonstration of color mixing. It has a convenient on/off switch and turn-knobs allow the user to precisely control individual light colors.



# COLOR MIXING DEMO PROJECTOR **★** ITEM 3559-10

This unit is a projector demonstration of color mixing. The convenient control knobs can be used to precisely control individual light colors.

Made of plastic



#### COLOR FILTERS, 5/PK ITEM 3559-25

These packs of color filters are ideal for light experiments. Colors include, red, yellow, orange, blue, and green.



# DEMONSTRATOR OF COMBINATION OF 3 BASIC COLORS • ITEM 3559-30

Use this tool to demonstrate color addition and colored shadows. The 3 light sources of red, green, and blue are put into the base, and with the turn of the knob you can experiment with color combinations and color additions. Comes with a white screen for easy viewing.



# TILE, OVERHEAD, COLOR, 1"SQUARE, 4 COLOR, 52/SET ITEM 9420-00

Colorful, transparent, acrylic overhead tiles. Colors include blue, green, yellow and orange.

• 13 of each color



#### **DIFFRACTION GRATINGS**

Diffraction grating pressed between clear glass plates. Ideal for classroom demonstration.

- Size 60 mm x 40 mm
- View area: 45 mm x 30 mm

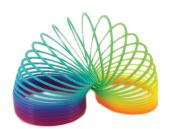
**4309-01** 2400 lines/100 mm Each **4309-02** 7500 lines/300 mm Each



#### METAL SPRING 🍎

Use this edge-wound spring for simple wave studies.

**3638-01** 3" x 6" Each **3638-02** 3" x 2.33" Each



## PLASTIC SPRING ITEM 3638-03

The spring is great for illustrating the properties of waves! It is made from colorful plastic for added appeal.

• Approx. 3" Dia. x 2.31" H



# SNAKY SPRING WAVE DEMONSTRATION ♠ TIEM 3640-00

This high-quality spring is designed for use in demonstrations and experiments. Closely wound spring 0.75" (20 mm) Dia. is 6.5 ft (2 m) long and can be extended up to 33 ft (10 m).



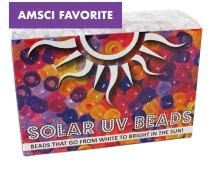


## SUBTRACTIVE COLOR THEORY DEMONSTRATION ♦ • □ ITEM 3559-20

The Subtractive Color Theory Demonstration can be used to promote memory retention, encourage logical thinking, and teach the optics and physics of color mixing. As you are challenged to create specific color designs on the back-lit board, you must predict how colors of the filter tiles will mix either by experimentation or previous understanding - then you must strategically slide the squares into the correct configurations. This Color Theory Demonstration has a game-like quality and is elegantly simple. It makes exploring and experimenting with color mixing accessible (and fun!) for curious minds of all ages. Teachers: Use the puzzle as a way to introduce the phenomena of subtractive color mixing to students in a classroom and explore color theory even more deeply through the games and related activities in the included quide.

#### Includes:

- Detachable Power Adapter
- 2 Sets of 18 Color Filters
- · Activity Guide





#### SOLAR UV BEADS (5)

On cloudy days, is it still important to wear sunscreen? Do all sunglasses provide equal protection? These solar beads change from white to colorful when exposed to a UV light source; the more UV light, the brighter they become. Use them to help answer the above questions and more! Learn about UV rays and where they come from. These beads are useful for science and health as well as arts and crafts (make cool bracelets, or necklaces, glue them to make mosaics... the possibilities are endless).

**ASB-1000** Multi Colored 100/pk **ASB-50** Multi Colored 50/pk



## DIGITAL LUX METER ITEM AR-825

This lux meter is useful for checking the level of luminance, the measure of the amount of light falling on a surface. It has a range of 0-50,000 lx with a quick 0.4 second sampling time. 9 V battery required (not included). Includes a carrying case.



## NEWTON'S COLOR DISC ITEM 9496-02

This disc uses a rotating hand-driven wheel to demonstrate that white light is composed of seven colors. It offers an active and exciting demonstration of the principles of light.



## EDU-DRUM □ ITEM 7200-00

The Edu-Drum, in C major, features an 8-in. hardened steel shell with 8 precise laser-cut tongues for accurate and consistent tuning. The relaxing tones will have you in tune with your surroundings. Comes in a cloth bag for storage.

Create amazing music— no music theory required!

- Includes: mallets, cloth bag, note stickers, song cards, instructions
- Played by beating or tapping with your bare hands/ fingers or mallets (included)
- Follow the included music sheets, or improvise and play your own songs and melodies
- Notes: c4, d4, e4, f4, g,4, a4, b4, c5 (c major)



#### TUNING FORK 10/SET, ALUMINUM, WITH MALLET ITEM 7020-10

This economy aluminum tuning fork set comes in a wooden storage box. Each fork has a place in the foam lining, die-cut for easy storage. These forks are useful to demonstrate the energy and vibration of sound.

- Striking mallet with hard & soft end
- Includes frequencies: 100G, 128C, 256C, 288D, 320E, 341.3F, 384G, 426.6A, 480B, 512C



# TUNING FORK 8/SET, ALUMINUM, WITH MALLET ITEM 7020-40

This economy aluminum tuning fork set comes in a wooden storage box. Each fork has a place in the foam lining, die-cut for easy storage. These forks are useful to demonstrate the energy and vibration of sound.

- Striking mallet with hard & soft
- Includes frequencies: 256, 288, 320, 341, 384, 426.6, 480, 512
   Hz



#### TUNING FORK 13/SET, ALUMINUM, WITH MALLET ITEM 7020-50

This economy aluminum tuning fork set comes in a wooden storage box. Each fork has a place in the foam lining, die-cut for easy storage. These forks are useful to demonstrate the energy and vibration of sound.

- Striking mallet with hard & soft end
- Includes frequencies: 100, 128, 256, 288, 320, 341, 384, 426.6, 480, 512, 1024, 2048, 4096 Hz



#### SYMPATHETIC DIFFERENTIAL TUNING FORK 2/SET, WITH MALLET ITEM 7120-90

This item serves as a combination tuning fork set that allows 2 demonstrations.

These are extra heavy (1.25" or 32 mm wide) chromium-plated steel 440 Hz tuning forks mounted on hardwood resonance boxes



#### **TUNING FORK, STEEL, SET/8**

This set of 8 tuning forks comes in a wooden case. The tuning forks are individually constructed of forged steel. Each fork is stamped with the musical scale note sounded by the fork and the frequency in Hz at the base of the tine.

- Chrome-plated
- Includes frequencies: 256, 288, 320, 341.3, 384, 426.6, 480, and 512 Hz

**3620-00** Wooden Box Each **3620-00F** Styrofoam Box Each



# TUNING FORK SET/8, ALUMINUM, DIAGNOSTIC ITEM 7020-30

These top-quality aluminum alloy tuning forks are great for physics and music classes. These forks are useful to demonstrate the energy and vibration of sound.

- Includes frequencies: 256, 288, 320, 341, 384, 426.6, 480, 512
   Hz
- Each is tuned within 0.05% of rated frequency
- Stamped with scale letter and frequency



## TUNING FORK, ALUMINUM, SET/8 ITEM 3610-00

This 8-piece set consists of tuning forks with frequencies ranging from 256 Hz to 512 Hz.

- Standard tuning forks
- Wooden Box
- · Hammer sold separately
- Wooden case



# CONCERT PITCH TUNING FORK SET/8, ALUMINUM, WITH MALLET ITEM 7020-60

This Concert Pitch or Physics Scale Tuning Fork Set comes in a high-quality wooden box. These equally tempered tuning forks are based upon the A note (440 Hz) above middle C (261.6 Hz). They are useful for teaching the physics of music.

- Striking mallet with hard & soft end
- Includes frequencies: 261.6, 293.7, 329.6, 349.2, 392, 440, 493.9, 523.2 Hz



#### PREMIUM TECHNICAL TUNING FORK, ALUMINUM ITEM 7120-40

This high-quality aluminum tuning fork delivers fine tones in 7 frequencies. It is useful for demonstrating the energy and vibration of sound. The tuning fork is a great addition to music classes as well as physics classes!

- Features adjustable weights for obtaining the following tones: C128, D144, E160, F170.7, G192, A213.3 and B240
- 8" (200 mm) L



#### TUNING FORK SET, 8 PIECE STANDARD DIATONIC, CARDBOARD BOX ITEM 7020-39



# TUNING FORK, STEEL STANDARD WITH BALL, PLASTIC POUCH ITEM 7120-00

Tuning forks are an excellent tool for demonstrating the physical nature of sound. This fork comes in a plastic pouch and is a great addition to physical science classrooms.

3630-00	250Hz	Each
3630-02	"C", 261.6Hz	Each
3610-04	"E", 329.6Hz	Each
3610-06	"A", 440Hz	Each



## TUNING FORK MALLET ITEM 3623-00

Use this mallet for activating Tuning Forks. It is made of wood and has a rubber surface.



# TECHNICAL FREQUENCY TUNING FORK SET/4, ALUMINUM ITEM 7120-00

These forks are useful to demonstrate the energy and vibration of sound. Acoustics engineers and physics teachers use these multiples to simplify calculations and tonal measurements. They are a great addition to classrooms as well as labs.

- Made of non-tarnishing aluminum.
- Calibrated C125, E250, G500, and C100



#### **TUNING FORK, ALUMINUM**

Use this tuning fork to demonstrate the relationship between sound and vibrations, the energy transfer between resonating systems, and as a source of standard frequencies. Each fork is stamped with the musical scale note it sounds and the frequency in Hz, at the base of the tine.

 Milled from non-rusting and nonmagnetic aluminum bar stock

3610-02	128 Hz	Each
3610-04	256 Hz	Each
3610-06	288 Hz	Each
3610-08	320 Hz	Each
3610-10	341.3 Hz	Each
3610-12	348 Hz	Each
3610-16	480 Hz	Each
3610-18	512 Hz	Each



#### **TUNING FORK, STEEL, STANDARD**

This product is individually crafted of forged steel. It's stamped with the musical scale note sounded by the fork and the frequency at the base of the tine of each fork.

Chrome

3620-01	100 Hz	Each
3620-02	128 Hz	Each
3620-04	256 Hz	Each
3620-08	320 Hz	Each
3620-12	384 Hz	Each



## DOPPLER EFFECT DEMO SET **(\*)** TEM W-0055

This set consists of 3 drilled, aluminum tuning forks, tethering cord, and a rubber striking mallet. It effectively demonstrates the change in pitch as the vibrating tuning forks are whirled toward and away from user. The set is great for physics demonstrations and experiments.



## STEEL BAR MAGNET RED/BLUE, PAIR

These bars are useful for student demonstrations, plotting magnetic fields, etc. They are made from magnetic steel strips. Each bar is painted red/blue and stamped with N and S to indicate north and south poles. Supplied in pairs with cardboard

- Separator and plated soft iron keepers
- Red only available, Item 3101-01-R

3101-01	3" (75 mm)	Each
3101-02	4" (100 mm)	Each
3101-20	6" (150 mm)	Each
3101-23	8" (200 mm)	Each



## ALNICO BAR MAGNET, 3", PAIR ITEM FRE-21

This item is a high-quality, powerful alnico alloy bar magnet with a nice red enamel finish. It is useful for demonstrations and experiments. A white dot helps to keep track of the poles. Packed with a cardboard separator bar and a plated keeper on each end.

3" (75 mm) L x 0.63" (15 mm)
 W x 0.38" (10 mm) thick



## ALNICO BAR MAGNET, 6", PAIR ITEM 3126-06

These alnico bar magnets have poles designated N and S for easy identification by young students. They are helpful for teaching about magnets in earlier grades. A red color adds aesthetic appeal.

• 6" (150 mm) x 0.5" (12 mm) x 0.25" (7 mm)



## STEEL BAR MAGNET, PLATED METAL, PAIR 🙌

These classic magnets are suitable for many experimental and demonstration needs in general science and physics laboratory. It offers an easy way to show the power of magnetic fields. This bar magnet is available with Al-Fe Carbon Steel with a polished finish, or nickel-plated steel. Plated soft iron keepers.

• 6" x 0.75" x 0.25" (150 mm x 19 mm x 7 mm) thick

**3101-33** Zinc-Plated Each **3101-33N** Nickel-Plated Each



## STEEL BAR MAGNET, PLATED METAL, PAIR

Ceramic magnets like these are classic tools that can be used in a multitude of experiments. They can also be used to aid in everyday teaching tasks.

3113-01	2" x 0.47" x 0.3"	Each
3113-02	1.5" x 1" x 0.39"	Each
3113-03	2.9" x 0.55" x 0.35"	Each
3113-06	1.2" x 0.39" x 0.24"	Each



## STEEL HORSESHOE MAGNET

These classic magnets are suitable for many experimental and demonstration needs in general science and physics laboratories. It offers an easy way to show the power of magnetic fields.

 0.19" (5 mm) thick and approx. 0.5" (12 mm) wide steel strips

3102-02	Chrome, 3" (75 mm)	Each
3102-03	3" (75 mm)	Each
3102-04	4" (100 mm)	Each

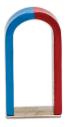


## MAGNET, HORSESHOE, STEEL, 75 MM, SINGLE

These magnets are suitable for conducting many experiments and demonstrations in the physics lab.

 Steel strips: approx. 12 mm wide x 5 mm thick

**3101-01-R** Red/Blue Each **3101-02-R** Red Each



#### U-SHAPED MAGNET 3" ITEM AR-110

This chrome steel U-shaped magnet comes with a keeper. The magnet is finished in red and blue baked paint. The pole of the magnet faces ground to make it free-standing.

3" (75 mm)



#### MAGNET, HORSESHOE ALNICO 35 X 35 X 10 X 15MM, RED, PAIR ITEM 7221-60

These classic magnets are suitable for many experimental and demonstration needs in general science and physics laboratories. They offer an easy way to show the power of magnetic fields. The magnets are a useful staple for many classes, and are supplied with keepers.

• 35 mm x 34 mm x 16 mm thick



#### GIANT PLASTIC HORSESHOE MAGNET, 210MM ITEM GHSMAG

Powerful magnets (with north and south poles clearly marked) are housed at the ends of this impressive giant horseshoe magnet.

• 210mm H



## ALNICO BAR MAGNET, PAIR ITEM N38

These strong alnico alloy magnets are painted red with a white dot to indicate the north pole.

1.5" (37 mm) L x 0.38" (10 mm)
 W x 0.25" (7 mm) thick



## **MAGNET, RING, CERAMIC**

This electromagnet can hold over 2 lbs! When the current is removed, the unit does not carry residual charge. It's a useful tool for illustrating the principles of electromagnetics!

• 32 mm X 18 mm X 6 mm

**3111-01G** Green Each **3111-01R** Red Each



#### ALNICO CYLINDRICAL MAGNET, 50 MM X 10 MM, PAIR ITEM 3107-03

These magnets are known for having high magnetic field. They are grounded on all sides.



# FERRITE BLOCK MAGNETS, SMALL 9 X 9 X 40 MM, PK/20 ITEM FB090940X20

These magnets are known for having high magnetic field. They are grounded on all sides.



## NEODYMIUM MAGNETS, PAIR ● ITEM 3114-01

These are very powerful and sensitive magnets, and are strong enough to hold together through hands and table tops. They are packaged in a small gift box.

• 0.5" Dia. x 0.25" H



#### MAGNET, RECTANGULAR BAR, 58 MM X 12.6 MM X 3 MM ITEM 3117-00

Small but mighty, these magnets are great for classroom demonstrations.

• 58 mm L x 12.6 mm W x 3 mm



## CERAMIC DISC MAGNET, SINGLE ITEM 3112-01

Used in conjunction with plastic beads and ring magnets for motion and collision studies in physics and for other applications.



#### MAGNET, ALNICO DISK, 42MM DIA X 7MM THICK, PAIR ITEM 7221-30

Each magnet in the set is 42 mm Dia  $\times$  7 mm thick.



## MAGNETIC PUTTY ♦ ► ■ ITEM 3196-00

Made with micron-sized, iron-based particles distributed throughout. It's perfect for science-loving kids, or for any adult that loves intelligent play! Use the magnet to do the "snake charmer" trick.

- Putty comes with a Neodymium cube magnet in storage tin
- 91 g/3.21 oz



# FERROFLUID MAGNETIC DISPLAY ♥ □ ITEM 3486-00

Ferrofluid is the astonishing liquid that becomes highly magnetized in the presence of a magnetic field. Using 2 included neodymium magnets, you can spike, toss, drop, pull, and bridge the Ferrofluid. You can even make it dance!

- For ages 12 and up, not a toy
- 2 oz
- 2.11" L x 1.13" W x 3.53" H



# ACRYLIC CUBE WITH MAGNET AND IRON FILINGS IN CENTER ITEM 3615-00

Mess-free magnetic field study means there is no need to clean up iron filings. The clear cube is filled with iron filings suspended in a solution. The clear acrylic material also allows for overhead projection for whole groups to view.

• 3" L x 3" W x 3" H



#### MAGNETIC FIELD PATTERN KIT TRANSPARENT 🍎 **ITEM MPPHST**

This item is a transparent frame containing magnetic particles in a water-based solution for showing magnetic field patterns. When a magnet is present, the particles of iron inside become slightly magnetized, so they attract each other and cluster into the lines that show the magnetic field patterns. The kit offers an interesting visual method of showing the power of magnetic fields.

#### Contains:

- Field pattern window
- 2 plastic-coated magnets
- 2 ferrite magnets,
- Information/instruction booklet
- Entire kit is CE certified
- 8.75" (220 mm) L x 4.75" (120 mm) W x 0.38" (9 mm) thick



#### MAGNETIC MODEL FIELD . ITEM 3119-00

The sturdy acrylic box is comprised of 117 mounted magnetic needles. It visually demonstrates the magnetic fields produced by a magnet! It is ideal for use with overhead projectors.

- Magnets sold separately
- 6" (150 mm) L x 6" (150 mm) W



#### **IRON FILLINGS SAVER** ITEM AR-111

This item gives you a great way to collect, contain, and store your iron filings or magnetic chips. The magnetized top quickly collects scattered filings and smoothly releases them into the container for secure storage. You can hold up to 454 g of iron filings in the easy-touse container.



## **IRON FILINGS CHIPS 50** G PLASTIC VIAL 49

These pieces of reusable zinc-plated iron wire replace the messy, rust-prone iron powder typically employed in demonstrations of magnetic fields. Use them in any demonstration requiring clear, curvilinear force lines.



ITEM 3124-00

## **IRON FILINGS, 500 G PLASTIC BOTTLE**

Use these filings for observing magnetic fields. These are grease-free, fine iron filings in reusable plastic bottles. They are great for demonstrations!

3124-01 Fine Fach **3124-02** Course Each



#### **ELEMENTARY MAGNETIC SET ITEM 4020-00**

This kit is a great way to get younger kids familiar with magnets! It includes 2 bumper cars, 2 floating ring sets, and 2 wands, so there's plenty of fun to go around. Kids will see the power of magnetics to propel and levitate objects for an unforgettable physics lesson!



#### **BUMPER CARS, PAIR ITEM CARS**

This set includes bumper cars only. These cars illustrate the propulsive power of magnets!

- Ring magnets required, sold separately
- Approx. 4" L x 2.5" W x 2" (100 mm x 60 mm x 50 mm) H
- Item CARFR36 Bumper Car and Ring Magnet Set



#### MAGNETIC FLOATING **RING SET ITEM FRSET36**

The Floating Ring Set is a great way to demonstrate the power of magnets!

- 4 plastic cased ring magnets with stand
- North and South poles identified
- 1.44" (36 mm) Dia.
- 0.31" (8 mm) thick



#### **GIANT FLOATING RING SET ITEM GFRSET**

Two massive plastic cased ring magnets with North and South poles marked with "N" & "S". CE certified.

Ring magnet size: 4" diameter x 3/4" thickness (100x20mm)





## MAGNETIC POLE FINDER ☑ ITEM TR-12

The Magnetic Pole Finder is a quick and easy way to demonstrate the 3-dimensional magnetic force field. It consists of a small alnico bar magnet mounted on a gimbal so that it will rotate freely. It is more convenient and accurate than the traditional methods using compasses and iron filings. The Magnetic Pole Finder is perfect for experiments on the forces between magnetic poles, fields around wire and coils and the properties of fields produced by electric currents.



#### **POLE MARBLES**

Color coded plastic cased magnetic marbles. Not only do they attract and repel, the color coding reinforces that opposite attract and likes repel. Red will only ever stick to blue.

• 5/8" (15mm) Dia.

**POMAR20** 20/pk **POMAR100** 100/pk



## MAGNETIC WANDS ITEM 4010-70

These durable, plastic wands are used in magnetism experiments. They have 2.75" (70 mm) magnet incased.

- Assorted colors
- 8" (200 mm) L



## COMPASS 5/8", 4/PK ITEM FRE-11

Detect slight magnetism in everyday objects such as metals, watches, etc. When compasses are arranged around a magnet, needles will align themselves with the magnetic field. The compasses are a useful prop for demonstrations about the power of magnetic fields!

• 0.63" (16 mm) Dia. compasses



#### COMPASS, LIQUID-FILLED MAGNETIC MAP ITEM 3121-31

Use this product to read topographical and tourist maps and determine the azimuthal location of a given place. It is suitable for overhead projection.

- Compact 2" (50 mm) dia., graduated from 0° to 360° in 2° increments, has a liquid-filled capsule, declination correction scale, and luminous points
- Comes with a yellow lanyard in blister packaging.
- Meridian lines help in accurate plotting of angles
- Magnifier with 4X magnification and 4 stencil cuts are built into the base
- 3 scales: mm, 1:25,000, and 1:50,000
- 2.5" (60 mm) x 5.5" (140 mm)



#### COMPASS MAGNETIC CLEAR BACK, 18MM, 20/PK ITEM 1249-60

Ideal for use with overhead projectors.

18mm in Diameter



#### MAGNETIC COMPASS 1 1/2" ITEM 3121-21

This compass is for plotting and exploring magnetic fields. It comes in a plastic case with a white background and contrasting markings for clear visibility. The red tip indicates north.

• 1.5" (38 mm) Dia.



## MAGNETIC LIQUID FILLED COMPASS

This plotting compass has direction indicated. It has a liquid-filled plastic body with a black base and contrasting markings for clear visibility. It is useful for magnetic demonstrations.

1250-50	1.77" (45mm)	Each
3121-01	1" (18mm)	4/pk
3121-03	1 3/8" (35 mm)	12/pk



#### MAGNETIC LIQUID FILLED COMPASS WITH CLEAR BACK AND LANYARD, 1 7/8" ITEM 1250-55

The outer ring of this compass can be rotated to set directions and for plotting. The clear back makes it ideal to be used for presentations with an overhead projector. It's excellent for teaching about navigation.

• 1.88" (48 mm) Dia.

VIEW AND DOWNLOAD SUPPLEMENTAL TEACHERS MATERIALS ONLINE BY VISITING

www.american-scientific.com



## COMPASS, MAGNETIC 50MM ITEM 3121-04

This compass comes in an aluminum case with a white background and contrasting markings for clear visibility.

• 50mm Dia.



#### LENZ LAW APPARATUS ♠ ♠ AR-105

The Lenz Law Apparatus allows you to demonstrate electric and magnetic forces. 2 identical-looking plugs are dropped through the copper pipe, but react very differently.

#### Includes:

- · Copper tube
- Magnet plug
- Metal plug
- End caps



## OERSTED'S LAW APPARATUS ITEM 3168-00

This apparatus is used for demonstrating the relationship between magnetism and the magnetic effect of an electric current flowing in a wire.

- Magnetic needle: 15 cm
- · Aluminum frame



## REVOLUTION **♣** □ ITEM 3164-00

This fascinating anti-gravity demonstration works on the principle of repelling magnets and is ideal for discussing magnet levitation and frictional force experiments. With a simple twist of the fingers, the axle spins horizontally in a state of near-perpetual motion for up to 20 minutes. Black and white reflecting strips on the axle allow students to observe the patterns created by the alternating colors and to measure rotation speed using a stroboscope (not included).

- Batteries are not required
- Approx. 5" L x 2.5" W x 3" H



## ELECTROMAGNET TIEM 3165-02

This electromagnet can hold over 2 lbs! When the current is removed, the unit does not carry residual charge.



## U SHAPE ELECTROMAGNET **→** ITEM 3165-01

This magnet is a model of the lifting magnet used in industry, such as for a scrap metal lifter. It consists of 2 plastic bobbins wound with enameled copper wire and mounted on each arm of a soft iron U-core. Each bobbin is fitted with 2 0.16" (4 mm) socket binding posts.



## SOLENOID (HELIX) AIR CORE (ROHS CERTIFIED) ●

Use these Air Core Solenoids to provide an external magnetic field where required and to change the rate of magnetic flux passing through a coil. They consist of a plastic spools with windings of insulated copper.

**3172-00** 16Awg Each **3175-00** 23Awg Each



Use this item when changing magnetic flux in electromagnets, electric motors, generators, and transformers.

• 8" L x 0.19" thick (200 mm x 5 mm)



#### STEEL BALLS, 100/PK ITEM 3183-00

As a substitute for iron filings for studying the phenomenon of magnetic fields. Form clusters and chains between unlike poles of magnets. Polished, hardened spheres of 1/8" (3 mm) dia.

VIEW THE LATEST PRODUCT DEMONSTRATIONS, EXPERIMENTS, AND PROMOTIONAL VIDEOS ON OUR YOUTUBE PAGE OR BY VISITING

www.american-scientific.com

# The state of the s

#### **VACUUM PUMP, ELECTRICAL WITH GAUGE**

Great for pressure and gravity experiments! These Vacuum Pumps produce less noise and vibration, while using less energy. Their special design protects the environment and provides clean, filtered oil to the pump. They also prevents oil spray and oil from flowing back into and polluting the system. An alloy aluminum casing and a direct-drive design make for a compact and light pump that runs steadily for a long period of time, even in a low-temperature environment and at a low voltage. The convenient gauge and adapter allow for easy adaptability to experiments.

**6079-00** 110 Volts, 1/3 HP Each **6080-00** 110 Volts, 1/4 HP Each



## VACUUM BELL JAR DEMO ITEM 6080-01

Our quality Vacuum Bell Jar Demo is a great tool to discover how sound requires a medium to travel through. The Demo includes a glass bell jar, vacuum base plate, gasket, hose, and battery-operated ringer electric bell.

 Replacement Glass Jar, Item 6080-01B



## VACUUM BELL JAR DEMO, PLASTIC ITEM 6080-05

Our plastic Vacuum Bell Jar Demo is a great tool to discover how sound requires a medium to travel through.

#### Includes

- Plastic Bell Jar
- Vacuum Base Plate
- Gasket



## VACUUM PUMP 🍎

Use this handheld vacuum pump to remove air from tubes or jars for experimental purposes. It works well with the Coin and Feather Apparatus.

**6076-11** With Gauge Each **6076-12** Without Gauge Each



## GEOMETRIC SOLID, HARDWOOD, SET/6 ITEM SCI-1200

#### Includes:

- Square equilateral prism (25 mm x 75 mm length)
- Cube (5 cm)
- Cylinder-narrow (25 mm dia x 75 mm length)
- Triangular pyramid (47 mm dia base x 85 mm height)
- Circular cone (5 cm dia base x 8 cm height)
- Sphere (5 cm dia)



## BALL PRESSURE GAUGE ITEM 6080-10

Inflatable balls will be filled to the proper pressure with the help of this gauge.







## BERNOULLI BAG, PK/4 🍪 👅

How many breaths does it take to fill up an 2.4 m (8") long plastic tube? If you place it firmly to your mouth (like a balloon), it will take many breaths to blow it up. But if you hold it out in front of your mouth and blow, air pressure in the stream you produce is reduced, entrapping surrounding air to join in, filling up the bag.

• Item 7040-00N does not include Teacher's Guide



## MELTING POINT APPARATUS ITEM 3265-00

This apparatus makes it easy and simple to measure the melting point (250°C limit). The apparatus consists of an aluminum testing block with a slanted thermometer hole.

- Bunsen burner, and thermometer are required but not included
- 50mm L x 63mm W



# ADVANCED GAS LAWS DEMO WITH TEMPERATURE 199 ITEM 7415-00

This unique, compact apparatus simplifies the ideal gas law and the relationship between the pressure, temperature, and volume of a gas that is constant. Twist the handle to compress the air, read the volume, temperature, and pressure, and then repeat. It will show that the relationship stays the same, for a simple and memorable demonstration in physics classrooms.



#### ATMOSPHERIC MAT WITH HOOK �� █ ITEM AR-510

This durable, thick rubber mat has a simple design that demonstrates a powerful concept: atmospheric pressure. Pick up an ordinary flat lab stool or try to lift the mat off a table, which is nearly impossible. Show how suction cups stick because of the pushing force of air, not from a pulling "suction" force.

26.7 cm x 26.7 cm (10.5" x 10.5")



## HARBOTTLE ♠ ♠ ITEM 6080-40

Discover air pressure like never before with just a balloon and a bottle. This is an excellent teaching tool for introducing pressure and discussing its applications, such as vacuum cleaners, flight, pumps, weather, and even how we breathe.

- Glass bottle
- 2 balloons
- Rubber stopper
- 20 cm (5") Dia



## MAGDEBURG HEMISPHERE **→** ITEM 3563-00

Use these hemispheres to demonstrate air pressure and vacuums. They are made of flexible synthetic rubber.

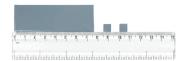
- 50 mm (2") Dia.
- Sold in a pair



#### **DENSITY BALL**

Use this ball to demonstrate the effect of temperature on the density of a liquid. When the water is heated, its density reduces and the ball sinks.

**3501-00** 3.54" (90 mm) Each **3501-10** 2.71" (69 mm) Each



#### DENSITY KIT ITEM CEM-225

This kit introduces students to important properties of matter. It is perfect for physical science and physics classrooms.

 Includes: 1 aluminum bar, 2 aluminum cubes, and 1 ruler



## SPECIFIC GRAVITY BOTTLES, UNCALIBRATED

These items are also called Density Bottles or R.D. Bottles. The bottles are useful for illustrating physical properties such as density.

- Each bottle has a perforated stopper (about 0.03" (1 mm) bore) and a ground mouth for a proper fit
- Made of borosilicate glass

**3505-01** 10 ml Each **3505-02** 25 ml Each **3505-04** 100 ml Each



# CYLINDER FOR DENSITY DETERMINATION, ALUMINUM ITEM 3530-00

Use this aluminum cylinder to demonstrate Archimede's principle of displacement of fluids to determine density.

• 75 mm long x 25 mm dia. with suspension hook.



## SPECIFIC GRAVITY BLOCK SET ITEM WD4398

Use this set to find the volume, density, and specific gravity of an object. It is an ideal tool for teaching students about properties of different matter.

#### Includes:

- 300 ml aluminum catch bucket
- Aluminum overflow can with an angled spout
- · 3 hooked cubes of different metals
- Item 3520-04, Lead Specific Gravity Block with Hook, 32mm





## CUBES, VARIOUS METALS, SIDE 20MM

The cube shape makes calculating volume simple. Also available in 10mm and 1''

- Without hook
- Packed in a cardboard box

 3510-21
 Aluminum
 Each

 3510-22
 Brass
 Each

 3510-23
 Copper
 Each

 3510-24
 Iron
 Each

 3510-25
 Lead
 Each

 3510-26
 Zinc
 Each



## METAL CUBES/DENSITY CUBES 🍎

Use these cubes to illustrate principles like mass and density. These cubes do not have a hook. Packed in a cardboard box.

#### Set includes

- Aluminum
- Brass
- Copper
- Iron
- LeadZinc

**3510-02** 0.75" (20 mm) 6/set **3510-03** 1" (25 mm) 6/set



### **METAL CYLINDERS**

This set includes 6 cylinders, 1 each of aluminum, brass, copper, iron, lead, and zinc. The cylinders are ideal for showing students properties of metals.

· Packed in a cardboard box

**3525-01** 3/8" x 1 3/16" 6/pk **3525-02** 3/8" x 1 1/2" 6/pk



#### DENSITY CYLINDER SET/6, CARDBOARD BOX ITEM 3523-00

Use this set to prove the inverse relationship between the density and the length of cylinders of equal mass and diameter.

- Aluminum, lead, copper, brass, iron, zinc
- Packed in a cardboard box
- Similar-density cylinders can also be supplied





#### METAL DISC SET

This set is ideal for experiments to demonstrate magnetic properties and classifications of metals in physics and chemistry classrooms.

MDSBLBlank, 25mm8/pkMDSSTStamped 25mm8/pk



## BUCKET AND CYLINDER ITEM 3534-00

This Archimedes' Principle apparatus consists of a solid metal cylinder in a close-fitting metal bucket.

VIEW AND DOWNLOAD SUPPLEMENTAL TEACHERS MATERIALS ONLINE BY VISITING

www.american-scientific.com



## MICRO:BOT № 🍎 🖾 ITEM 8830-00

Coding has never been simpler and more fun than with the Micro:bot. Compatible with BBC micro:bit, the Micro:bot, is a small programmable robot great for learning coding and robotics using Block code and Javascript. The American Scientific exclusive educational Activity Guide makes learning easier by providing step-by-step coding activities that take advantage of all the Micro:bot capabilities.

#### Set includes:

- Micro:hot
- · BBC micro:bit
- Ultrasonic distance sensor
- · Remote control

#### Specifications:

• 10 x 15 x 23 cm (4" x 6" x 9")

**8830-01** Micro:bot without BBC micro:bit Each **8830-02** BBC micro:bit only Each







## EDU-DRONE **●** ITEM 3700-00

Drones, or unmanned aerial vehicles (UAVs), are often associated with their military or police use, yet are increasingly being used for fun and recreation. The Edu-Drone also serves as unique tools in STEM education, as educators seek out exciting opportunities to engage students and promote a mindset of creativity and innovation.

Drone weight: 38 g (1.3 oz)

- Controller weight: 125 g (4.4 oz)
- Drone dimensions: 18 cm x 18 cm x 6.5 cm (7" x 7" x 2.5")
- Controller dimensions: 12.5 cm x 14 cm x 6.5 cm (5" x 5.5" x 2.5")

#### Includes:

- Edu-Drone, unassembled
- Controller
- Rechargeable Battery
- Instructions



## IQ KEY PERFECT 400 ROBOTIC STEM KIT • ITEM 3570-55

Use this Robotic Kit to stimulate right brain creativity and encourage students to design and build machines of their own. Students will learn about simple machines, electric circuits, energy transfer, energy transformation, problem-solving and the design process as they create and "play". Requires 2 AA batteries, not included.

#### Features:

54 pieces, includes plans to build 10 different models



## IQ KEY PERFECT 600 ROBOTIC STEM KIT ● ■ ITEM 3570-60

Students will learn about simple machines, electric circuits, energy transfer, energy transformation, problem-solving and the design process as they create and "play". Requires 2 AA batteries, not included.

#### Features:

• 84 Pieces, includes plans to build 20 different



## IQ KEY ADVANCE KIT TEM 3590-85

Students will also learn about wireless controllers and connections by incorporating the wireless remote control and the receiver capsule into new or existing models. This set is intended to pair with the IQ Key Perfect 600 Robotics Stem Kit, item #3570-60. Requires AA batteries, not included.

#### Specifications:

 14 pieces, including wireless remote control and receiver capsule



## IQ KEY PERFECT 1200 ROBOTIC STEM KIT • ITEM 3590-80

With this robotics kit, students can build with the IQ Key Advance 1200 to observe energy demonstrations and identify different machines that are working together to transfer and transform energy.

## Specifications:

- 22 Pieces, includes plans to build 25 advance models
- Requires 4 AA batteries, not included
- CE certified



## IQ KEY PERFECT 1000 ROBOTIC STEM KIT **⊕** ITEM 3570-65

Students will learn about simple machines, electric circuits, energy transfer, energy transformation, problem-solving and the design process as they create and "play".

#### Features:

- 116 Pieces, includes plans to build 40 different models
- Requires 2 AA batteries, not included





0-9		Burner Wing lops	3.
9V Lead W/Alligator Clips, 12"	66	Butterfly in Display	53
		Butterfly Pavilion, Hanging Butterfly Cage	5: 5:
A		Butterfly Pavilion, Pop-Up Butterfly Buzzer with Lead Wires	5. 6!
Accessories For Optical Disk Hartl, set/7,		buzzer with Lead Wifes	0.
Wooden Box	80		
Acrylic Ball	82	C	
Acrylic Cube	82	Caffeine Mug with Handle 400ml	19
Acrylic Cube With Magnet and Iron Filings in Center	91	Calipers, Micrometer, Metric and English,	4.
Acrylic Cylinder	82	0-25 mm	43
Acrylic Equilateral Prisms	81	Calipers, Micrometer Screw Gauge, Metric and	4.
Acrylic Lens and Prism, 7/set	80	English, 0-1 inch	42 43
Acrylic Lenses	81	Caliper, Vernier, Digital	4.
Acrylic Prism, Trapezoidal	81	Caliper, Vernier, Dual Scale, Steel Plated, Improved Design, with Wooden Box	43
Advanced Gas Laws Demo with Temperature	96	Caliper, Vernier, Plastic	43
Advanced Spectrometer	85	Calorimeter 2/set	7:
Advanced Student Microscope	44	Capillary Tube set, Communicating Capillaries,	, .
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Air Puck	67	Carbon Electrode, For The Hoffman Electrolysis,	
Air Track Apparatus Complete Air Track Only	67	Pair	12
Allihn Condenser, Full Length and Joint, Borosilicate	07	Carbon Electrode Rod 9"	64
Glass	21	Carbon Rod, 4", 10/pk	64
Alnico Bar Magnet, 3", Pair	90	C-Clamp, 4"	32
Alnico Bar Magnet, 6", Pair	90	Centrifuge Tubes, Conical Bottom,	
Alnico Cylindrical Magnet	91	Graduated 15 ml, Borosilicate Glass	23
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·		Clamp Extension, Four Prong	3:
В		Clamp, Hoffman, Screw Closed	3:
	41	Clamp, Right Angle	32
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Balloon Helicopter	70	Coin and Feather Demo	70
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Balls, Drilled, 19 MM, Spare	73	Collision in One Dimension	6, 69
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Balls, Hooked, 25 MM, Spare	73	Color Mixing Demo	8! 8!
Basic Meter	62	Color Mixing Demo Projector Color Paddles, 18/set	8! 8!
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Beaker Mug with Handle	19	Compass, Liquid-Filled Magnetic Map	93
Beaker Stand, Adjustable For Micro Burner	33	Compass, Magnetic 50mm	94
Bernoulli Bag, pk/4	96	Compass Magnetic Clear Back, 18mm, 20/pk	93
Bias Circuit Board	60	Compound Bar / Strip	75
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Bioplast Mount, Crab Specimen, Acrylic	54	Condensers, Graham Coil Type, Borosilicate Glass	2:
Bioplast Mount, Honey Bee Life History, Plastic	53	Connecting Tube, Claisen Type, Borosilicate	
Bioplast Mount, Housefly Life History, Plastic	53	Glass, 19/22	22
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4/set Pionlast Mount, Wash Specimen, Asrelia	53 53	Connecting Tube, Distillation, Straight	22
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Blood Typing Tray Bottle Connector	33 37	Borosilicate Glass, 19/22	2:
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Boyle's Law Apparatus	13	Connection Wire with Alligator Clips	66
Brownlee Electrolysis Apparatus	6, 13	Connection Wire with Alligator Clips Red 24"	66
Bucket and Cylinder	97	Cork Borers	34
Bug Viewer, Extra Large, 2.5X	47	Cork Borer Sets	34
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Bumper Cars, Pair	92	Cover Slips Crossdila Clips 37 mm 10/pk	
Bunsen Burner, For Propane Gas	33	Crocodile Clips, 37 mm, 10/pk Crookes Radiometer	66 57
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Buret, Geissler Type, Straight, PTFE Stopcock,		Crucible, Wide Form, Porcelain	26
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Cylindrical Lenses, Glass	82	Ferrofluid Magnetic Display File, Triangular, Steel	91 38
<b>D</b>		Filtering Flask, w/ Side Arm, Borosilicate Glass	20
D Call Bathan Haldan	6.4	Filtering Kit	38
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Density Cylinder 6/set, Cardboard Box Density Kit	96	Flask, Pear Shape, Single Neck, Borosilicate Glass	20
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Digital Lux Meter	87	Flat Electrodes Copper	64
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Digital Multimeter	62	Flat Electrodes Zinc	64
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E		Griffin Beaker Set, Graduated, Plastic,	
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IQ Key Perfect 400 Robotic STEM Kit	98	Magnifier, Economy, 3X, 38 mm, 12/pk	47
IQ Key Perfect 600 Robotic STEM Kit	98	Magnifier, Mounted in Folding Stand, Glass,	
IQ Key Perfect 1000 Robotic STEM Kit	99	110mm Dia.	48
IQ Key Perfect 1200 Robotic STEM Kit	99	Magnifier, Reading Glass, 2X	47
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L		Measuring Cylinders, Metric Scale, Borosilicate Glass	20
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and Lanyard, 1 7/8"	93	Nitinol Memory Wire, Straight	77
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Magnetic Pole Finder	93	0	
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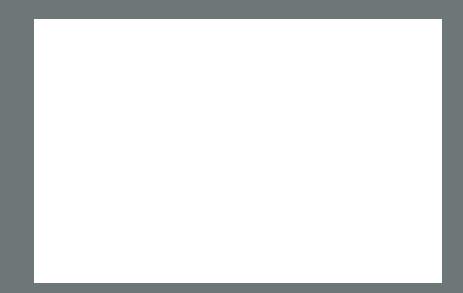














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