Welcome to our catalog!

We asked educators, What would you need to build the ideal science classroom? And they told us:

- An atmosphere that encourages curiosity and cooperative learning.
- Durable, hands-on materials that can be used again and again.
- Experiments that are fun, memorable, AND scientifically rigorous.
- Organized lessons that don’t burden teachers with advance preparations.

We believe that our catalog offers all these things. Whether you’re a teacher, a parent, a camp leader or a seasoned science workshop presenter, we think you’ll find something here to fit your needs and budget.

Thank you for your continued support of our company. For us, Teachers Serving Teachers® isn’t just a slogan—it’s the reason we come to work every day!

From our classroom to yours,

Tami G. O’Connor

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Prices subject to change. Check website for most current pricing.

Products being sold are not toys. They are for educational/laboratory use only. They are not intended for use without adult supervision by children 12 and under.

It’s Easy to Order!

Online: www.TeacherSource.com

eMail: info@TeacherSource.com

Mail: Educational Innovations, Inc.
5 Francis J. Clarke Circle
Bethel, CT 06801 USA

Phone: (203) 74-TEACH (83224)

Fax: (203) 229-0740

Hours of Operation: Monday-Friday 9-5 Eastern U.S. Time

Purchase Orders:
Educational Innovations is happy to accept official purchase orders from schools and other educational institutions located within the United States.

Shipping & Handling:
For prepaid orders within the contiguous United States (check, credit card, or money order) standard shipping is 8.5% of the total cost of the order with a minimum of $7.95. **Ground shipping is free on online orders over $99!**

For prepaid orders (check, credit card, or money order) to Alaska, Hawaii & US Territories, standard shipping is 12% of the total cost of the order with a minimum of $12.00.

For schools and businesses on account NET 30, standard shipping is based on a number of factors, including weight, volume and distance. You should estimate 10% of the total cost of the order with a minimum of $7.95.

Note that certain bulky items may incur higher shipping charges. We will contact you if higher shipping rates apply.

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Purchase orders, checks or money order (payable to Educational Innovations, Inc.), and credit cards are all accepted.

Sales Tax:
If sales tax is required on your order, it will be calculated during the checkout process. We are currently required to collect sales tax in CA, CT, NJ and TX. We will collect sales tax by all jurisdictions required by law.

Customer Service:
Our product experts are ready to answer all your questions. Feel free to call during our business hours or email us at info@TeacherSource.com.

Satisfaction Guarantee:
We feel that your order is not complete unless you are totally satisfied. If you are not 100% satisfied with an EI product, simply return it to us within 30 days for a prompt refund or exchange. It’s as easy as that!

Printable Order Form:

Find Us Online:

Visit our website to get a printable price quote.

Call us to learn more about our school discounts.

See page 111 for more details!
EI Exclusive Programs: Take Science Home!

Join the Kids’ Science Club!

Our Kids’ Science Club for students in K-6th grades is an awesome way to improve science literacy and earn FREE science materials for your classroom at the same time. You’ll get new packs of 24 student fliers several times a year.

- Choose a due date and send fliers home with students. Use our handy parent letter template!
- After students have returned their forms and payment, compile your Master Order Form.
- Submit your order by phone, fax, mail, or online.
- Soon a box of science goodies (and free gifts) will be delivered to your classroom!

Plus, we’ll ship your order for free. Best of all, you’ll accrue Extra Credit Points for your students’ purchases, which you can redeem for free science materials for your class!

To learn more about the program and enroll, visit: www.TeacherSource.com/clubsignup

Home Science Lab
The gift of science delivered to your home every month!

See page 131 for more details!

“My 8-year-old granddaughter loves science, and this series is perfect for her. Since completing the first kit, she can’t wait for the others to arrive! Thank you for creating such a well thought-out and interesting program for kids who enjoy science!” — Marta

“Our Home Science Lab is a 1, 3, or 6-month subscription series bursting with hands-on projects for children ages 6-11. One month your kids will whip up a batch of gooey slime as they explore the world of polymers…Another month they’ll learn about air pressure and fluid dynamics as they make a ping-pong ball lodge in a funnel, even when turned upside down… They’ll delight in levitating magnets… Your kids will have so much fun with these unique, sensory, hands-on projects, they might not even realize that they’re learning!

“‘My children (ages 5 & 7) feel like scientists when they conduct the experiments. Thank you for creating such a great product and delivering it to our door each month!’” — Tanya L.

My children (ages 5 & 7) feel like scientists when they conduct the experiments. Thank you for creating such a great product and delivering it to our door each month!” — Tanya L.

“This kit screams KID! All the experiments were easy for my 11-year-old to complete on his own.” — Jen W.
New Products

NEW! Aluminum Density Samples
This set of 12 aluminum samples is larger than most others you’ll find on the market, and a much better price! Perfect for water displacement and accurate graphing of volume. See page 42.

NEW! Constant Velocity Tubes
Three of the 34" tubes contain colored oil-based liquids of differing viscosities and an air bubble. The fourth tube contains a colorless oil and two spheres of differing materials. See page 43.

NEW! Weather Station Science Kit
Measure the weather right in your back yard or school yard. Follow wind direction temperature, rainfall, and more. Discover the greenhouse effect by creating your own enclosed growing environment. See page 27.

NEW! Shimmer Putty Trio
Each plastic jar contains three different colored portions of slippery, shimmery, scented, silicone-based putty. Introduce your students to non-Newtonian substances and let the learning begin! See page 54.

NEW! Bottle Bushing
An inexpensive and quick way to attach standard soda bottles to PVC piping for use in many STEAM projects such as bottleponic, hydroponic and aquaponic gardens, dispensers, etc. Made from food grade PVC and includes a food grade O-ring. See page 39.

NEW! Super Slime Mega Kit
Includes 32 mixing cups with storage lids, 32 measuring cups, two measuring beakers, 32 stirring sticks, instructions, and an activity guide. See page 55.

NEW! The Apollo 11 Adventure Kit
The Apollo 11 Adventure Kit is a unique way to commemorate the 50th anniversary of this dramatic moment in space history. See page 28.

Find lesson ideas and product videos at www.TeacherSource.com
New Products

**NEW! Backyard Brains Kits**

- **Muscle SpikerBox**
  Listen to and record your own (or your friends') muscle action potentials, and display them live on your smartphone, tablet, or laptop. See page 9 or page 62.

- **The Claw Bundle**
  Make a grip with your fist, and the Claw’s appendages closes. Relax and the claw relaxes! See page 9 or page 62.

- **Human-Human Interface**
  Have you ever dreamed of controlling the people around you? With the Human-Human Interface, that power is yours! See page 9 or page 62.

**NEW! DoughLab: Bake & Learn**

DoughLab comes with everything you need to perform over five experiments in your kitchen or classroom and learn about gluten, yeast, and how to create perfect loaves of bread. See page 11.

**NEW! AquaSprouts Garden**

The AquaSprouts Garden lets you stylishly combine your garden and aquarium into a self-sustaining ecosystem that fits on your desk. See page 10.

**NEW! Spinosaurus Tooth**

Our Spinosaurus Tooth was collected in Morocco and is preserved in a Riker Mount specimen box that can be easily opened to more closely examine this fossilized tooth. See page 24.

**NEW! Forensic Case Study Kits**

We have three exciting new forensic kits to introduce your students to crime lab investigation techniques. They will analyze a variety of forensic evidence including fingerprints, unknown powders, urine specimens, money, and handwriting samples. See page 17.

Call 203-74-TEACH (83224) or email info@TeacherSource.com
New Products

**NEW!** Static Snowstorm Kit
Fill each plastic globe with small Styrofoam pellets that react when the globe is statically charged. Perfect for demonstrating that like charges repel and unlike charges attract. See page 112.

**NEW!** Thermoelectric Energy Demonstration Kit
With just the warmth of your hand and the cold from a piece of ice, you can generate electricity—and even run a motor! See page 107.

**NEW!** Surprising Science for Kids: MAGNETS!
Our exclusive kit includes everything your young scientist needs for hours of hands-on investigative learning. We think you’ll agree that it’s an exceptional value. See page 116.

**NEW!** Light Modulator
Demonstrate light modulation and communication with ease and leave your students in awe! The sound is loud and clear for all to hear! See page 79.

**NEW!** OHAUS Pen Meter (OHAUS ST10)
After more than a century of perfecting the art of measurement through our durable weighing products, OHAUS precision is now available in a line of pen meters that provide accurate measurement of pH, oxidation-reduction potential (ORP), conductivity, salinity, and total dissolved solids (TDS). Starter pen meters are the economical option when you are simply looking for meters that will provide accurate measurement without restriction. See page 130.

**NEW!** Let It Glow Kit
This fascinating, hands-on lesson will “shine a light” on the concept of different wavelengths of light in a way your students won’t forget! A do-it-yourself tabletop version of one of the most famous physics experiments of all time—the photoelectric effect. See page 74.

**NEW!** Balancing Bird Puzzle
Our Balancing Bird Puzzle is a wonderful do-it-yourself physics puzzle for students of all ages. Comes with four pre-cut wooden pieces, four ceramic ring magnets and assembly instructions. See page 86.

Find lesson ideas and product videos at www.TeacherSource.com
New Products

**NEW! Kiko.893 Robot**
Budding engineers will love Kiko.893—an infrared-sensor-detecting, obstacle-exploring robot. This adorable little guy has two pre-programmed modes (Follow-Me and Explore) and plenty of sound and light effects. See page 63.

**NEW! Dodeca 12-in-1 Solar-Hydraulic Kit**
This unique kit will teach your students how to engineer 12 different robots that use both solar and hydraulic power in harmony. See page 63 or page 103.

**NEW! Exit: Escape Room Kits**
These unique games are a thrilling way to encourage critical thinking and collaboration among your students! Players must use their team spirit, creativity, and powers of deduction to crack codes, solve puzzles, collect objects, and earn their freedom bit by bit. Five new kits! See page 132.

**NEW! 3D Pen**
Our 3D Pen puts the power of 3D printing right in the palm of your hand. Use it to create nearly anything you can imagine! Use it to create 2D objects on a hard surface, or create fully 3D objects. See page 71.

**NEW! Fischertechnik Introduction to STEM I**
This robust educational kit is the ideal solution for bringing a STEM curriculum into your elementary school classroom. Recommended for grades 2-4. See page 70.

**NEW! Fischertechnik Robotics: BT Beginner**
An ideal kit for the engineers and programmers of tomorrow! It contains over 380 pieces and enables students to build 12 different fun and functional models. See page 70.

Call 203-74-TEACH (83224) or email info@TeacherSource.com
New Products

NEW! DazzLinks Sets
DazzLinks is an open-ended building kit designed to inspire creative mechanical projects. Create creatures, windmills, vehicles, or whatever your mind can imagine! Available in sturdy cardboard or plastic. See page 68.

NEW! Lux Blox Sets
Lux Blox Sets have generous assortments of parts designed for students to explore STEAM concepts across the curriculum! Get ready to have in-class team design challenges, explore machines, biological structures, chemical structures, mathematical concepts, computer science projects, and much more! See page 68.

NEW! E-Blox® Kits
E-Blox do more than help your students build their own creations... they bring them to life! These colorful, interactive blocks contain electronic components that—when properly assembled—form a circuit that will light up LEDs, spin motors, sound alarms, and much more. No wires! A great addition to any STEM program, these blocks are compatible with other building brick sets. See page 62 or page 110.

Find lesson ideas and product videos at www.TeacherSource.com
New Products

NEW! Crazy Circuits
These Lego®-based modular electronics kits make learning about electronic circuitry as easy as building with plastic blocks! Can’t solder? No problem! All Crazy Circuit materials are designed to work with any conductive material and can be sewn, snapped, or stuck to many different surfaces. See page 60 or page 109.

NEW! Squishy Circuits
Squishy Circuits uses conductive and insulating dough to teach the basics of electrical circuits—a perfect blend of play and learning! Our dough kits, projects, and recipes teach problem solving and engineering concepts and inspire creativity and independent thinking. See page 61 or page 109.

NEW! Brackitz Sets
Brackitz is an award-winning STEM building set that enables you to design and construct any 3D structure you can imagine. Unique “connect-anywhere” pieces easily attach to traditional planks at any angle, allowing builders of all ages to craft everything from small-scale creations to gravity-defying 3D structures with moving parts. Five new kits! See page 69.

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Larvets - Flavored Larva Treats

These edible, farm-raised larva are Bar-B-Que, Cheddar Cheese, and Mexican Spice flavored. These dried, delicious treats are an unforgettable way to begin a food science or health unit. Some of our students describe the taste and crunch as similar to popcorn. 2 g/pkg (=40-50 worms).

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<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
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<tr>
<td>BUG-250</td>
<td>Larvets pkg</td>
<td>$1.95</td>
</tr>
<tr>
<td>BUG-250BX</td>
<td>Box of 24 pkgs</td>
<td>$47.95</td>
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Crick-ettes - Flavored Cricket Treats

Real, edible, dried crickets! These packages of farm-raised crickets are flavored with either Salt & Vinegar, Bacon & Cheese, or Sour Cream & Onion. Great for teaching that eating insects is common in many parts of the world! Serve as memorable hors d’oeuvres! 1.4 g/pkg.

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<th>Item</th>
<th>Description</th>
<th>Price</th>
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<tr>
<td>BUG-265</td>
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<tr>
<td>BUG-265BX</td>
<td>Box of 24 pkgs</td>
<td>$47.95</td>
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Chocolate Covered Insects

Each package contains six completely edible, farm-raised chocolate covered insects (three crickets and three larva).

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<th>Item</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>BUG-355</td>
<td>Chocolate Covered Insects pkg</td>
<td>$2.95</td>
</tr>
<tr>
<td>BUG-355BX</td>
<td>Box of 24 pkgs</td>
<td>$59.95</td>
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I Ate a Bug Today Stickers

The best way for your students to brag about their bug eating prowess. Package of 10. 1.5” diameter.

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<th>Item</th>
<th>Description</th>
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<tr>
<td>BUG-110</td>
<td>10 Stickers</td>
<td>$1.75</td>
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</table>

Scorpion Lollipops

Scorpions can be found in deserts, grasslands, rainforests, and our delicious lollipops! These completely edible, farm raised scorpions come in four sugar-free flavors. Colors and flavors may vary.

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<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
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<tr>
<td>BUG-400</td>
<td>Scorpion Lollipop</td>
<td>$3.25</td>
</tr>
<tr>
<td>BUG-400BX</td>
<td>Box of 36 Lollipops</td>
<td>$109.95</td>
</tr>
</tbody>
</table>

Genuine Farm Raised Bug Candy

All of our insect candy and snacks are hand made with great care, using only completely edible, farm-raised insects. Though our insect products contain no nuts, they are not manufactured in a nut-free environment.

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<th>Item</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>BUG-160C</td>
<td>Cricket Lollies</td>
<td>$1.95</td>
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<tr>
<td>BUG-160W</td>
<td>Larva Lollies</td>
<td>$1.95</td>
</tr>
<tr>
<td>BUG-150BX</td>
<td>Box of 36 Cricket &amp; Larva Lollies</td>
<td>$59.95</td>
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<tr>
<td>BUG-600BX</td>
<td>Box of 36 All Cricket Lollies</td>
<td>$59.95</td>
</tr>
<tr>
<td>BUG-650BX</td>
<td>Box of 36 All Larva Lollies</td>
<td>$59.95</td>
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Find lesson ideas and product videos at www.TeacherSource.com
Life Science

NEW! Backyard Brains Kits - Neuroscience for Everyone!

Muscle SpikerBox
Electricity courses through your muscles with every step you take, every turn of your head, and every time you pick up a pencil, electricity courses through the muscles involved. Electricity acts as a signal telling your muscles to move and it’s also produced by those muscles when your brain tells them to contract. Before now, seeing or listening to your bioelectricity was a costly and complex process. But now, with the Muscle SpikerBox, you can easily begin to listen to and record your own (or your friends’) muscle action potentials, and display them live on your smartphone, tablet, or laptop.

*BIO-500 $149.95

The Claw Bundle
Experience the future of robotics with The Claw, a motorized gripper that lets YOU be the innovator of human interfaces! Paired with a pre-loaded Arduino microcontroller, the Claw responds to the EMG signals of your muscles. Make a grip with your fist, and the Claw’s appendages closes. Relax and the claw relaxes!

*BIO-505 $189.95

Human-Human Interface
Have you ever dreamed of controlling the people around you? With the Human-Human Interface, that power is yours! Thanks to the cutting edge of neuroscience and biotechnology, you will learn exciting neuroscience concepts first-hand as your brain sends an electrical impulse to your arm’s muscles, telling them to move. When your muscles move, this generates an even larger electrical signal. You’ll take that electricity, amplify it further and then inject it into the nerves controlling another person’s arm.

*BIO-510 $259.95

Backyard Brains Replacement Electrodes

BIO-515 $7.95 each

Backyard Brains Kits - Neuroscience for Everyone!

MudWatt
Electricity from Mud

Our MudWatt products are fun and educational science kits that use the natural micro-organisms found in soil to generate electricity. Microbiology, chemistry, and electrical engineering all in one versatile STEM-based kit! All MudWatt kits come with everything you need, except soil. So dig in and get revved up! You’ll know your bacteria is generating power when you see the LED light blinking. Free lessons and interactive MudWatt Explorer app available online.

Although we cannot see them with the naked eye, micro-organisms are all around us. One particular species of microbes possesses the unique ability to release electrons outside their bodies as part of their natural respiration. Each of our MudWatt kits utilizes this remarkable ability by providing mud-based microbes with two conductive graphite discs—the anode and cathode. The anode is placed within the mud where the electrogenic microbes grow, and the cathode is placed on top, exposing it to oxygen in the air.

*OHM-255 Classic Kit 1 vessel, 1 anode, 1 cathode, 1 hacker pack & more $39.95
*OHM-265 Science Fair Pack 3 vessels, 3 anodes, 3 cathodes, 3 blinker boards, 1 hacker pack & more $79.95
*OHM-270 Classroom Pack 10 vessels, 10 anodes, 10 cathodes, 10 blinker boards, 3 hacker packs & more $299.95

See our website for complete details on these exciting kits!

Call 203-74-TEACH (83224) or email info@TeacherSource.com
NEW! AquaSprouts Garden

The AquaSprouts Garden lets you stylishly combine your garden and aquarium into a self-sustaining ecosystem that fits on your desk. A beautiful introduction to aquaponics: you feed the fish, the fish provide nutrients for the plants, and the plants clean the water. The custom-molded garden bed fits any standard 10-gallon aquarium (not included). Kit also includes a light bar, a submersible 160-gallon-per-hour air pump, a timer and a special clay growing medium that keeps your garden healthy. There’s never been a better way to bring new life to your aquarium—or your classroom!

**BIO-170 $169.95**

**Shrinkles® Plant and Animal Cells**

Students draw and color their own models of plant and animal cells, then watch as the cells magically shrink in an oven (with adult supervision of course). Then they get to take their cells home as keychains or zipper pulls! Comes with instructions, teacher notes, diagrams, and enough materials to make 30 model cells. Use with colored pencils or permanent markers to create your own shrinking designs. The **Refill Kit** includes 50 sheets and 100 loops for keychains or zipper pulls. Kit makes 100 cells.

**BIO-150 Shrinkles Kit $33.95**

**DIN-110 Refill Kit $32.95**

**Sea Turtle Dichotomous Key Kit**

A great introduction to using a dichotomous key for species identification. The kit includes eight distinct sea turtle models. Each beautifully detailed turtle is 2” in length, and has the correct number of scutes on the carapace and plastron. A wonderful hands-on classroom activity, the kit comes complete with all the paperwork needed for background information, vocabulary, and identification.

**BIO-255 $15.95**

**Sponge Spicule Lab Kit**

This two-part classroom activity comes with six distinct species of sponges, each with a unique spicule type. Each kit has enough tissue for approximately 80 students working in pairs. Includes a written procedure for set-up and teacher preparation, along with a student worksheet and key. The lab requires only simple lab tools (tweezers, microscope, and slides) and household bleach.

**BIO-250 $39.95**
Life Science

Plant Maze Kit

Perfect for science fairs! Create a simple maze, plant a bean, and you’re all set. The transparent case allows you to observe as the bean sprouts and roots develop. Watch the plant wind its way up to the top of your maze. Kit includes a see-through plastic planter, several adjustable shelf pieces, two cover cards to block light during germination, a watering pipette, plastic magnifying glass, and detailed instructions. Soil and dried beans for planting not included. ≈9” tall. For ages 8+.

GRO-220 $13.95

TickleMePlant™ Kits

Tickle this plant and it moves. Amazing and fun—the TickleMePlant (Mimosa pudica) moves its leaves; even its branches can move down when tickled. TickleMePlants appear to sleep at night by closing up their leaves. The seeds can sprout in a matter of days and become ticklish within a month.

Classroom Kit includes 15 TickleMe Plant seed packets (over 200 Mimosa pudica seeds), 30 four-inch flower pots, 30 expanding Wonder Soil® wafers, and The TickleMe Plant Book, with more than 20 teacher-created science projects, cool experiments, growing tips, and easy to grow instructions.

Greenhouse Kit includes two TickleMePlant seed packets (≈30-40 seeds), six flower pots, six soil pellets, easy to grow instructions, and one reusable greenhouse (6.6” x 5.5” x 4.25”).

Growing Kit includes one Jiffy Mini-Greenhouse, six peat pellets, one TickleMePlant seed packet, and easy to grow instructions. (Greenhouse size 5” x 4” x 2.5”.)

Seed Packet includes 10-20 seeds.

GRO-145 Classroom Kit $89.95
GRO-140 Greenhouse Kit $21.95
GRO-135 Growing Kit $14.95
GRO-130 Seed Packet $5.95

Resurrection Plant

Grow the fastest-acting plant on the planet! The Resurrection Plant will transform from a dormant brown ball into a lush fern in a matter of hours. Starts at about 2” long and gets much, much bigger!

GRO-175 $5.95

NEW! DoughLab: Bake & Learn

DoughLab is packed with fun, tasty, and educational experiments with yeast, dough, and bread. It comes with everything you need to perform over five experiments in your kitchen or classroom and learn about gluten, yeast, and how to create perfect loaves of bread. You can even inflate latex gloves using the power of yeast! Includes enough materials for three loaves, plus additional experiments.

BIO-270 $24.95

Hydroponic Plant Lab

These oversized test tubes are perfect for sprouting seeds and growing seedlings. Did you know that roots grow faster than the plants themselves? That’s what we discovered testing this kit in our office. Do plants in polymer crystals (page 57) grow faster than those in soil? There’s only one way to find out. Includes three shatterproof plastic test tubes, three support rods, three seed baskets, and activity guide.

GRO-240 $24.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Animal X-Rays
Learn about each animal and the process of radiology. Includes cichlid, sunfish, frog, chameleon, crocodile eggs, iguana, python, rattlesnake, turtle, hawk, kangaroo, marmoset, and rabbit. 14 heavy-duty plastic X-rays, 14 reference photos, and a teacher/parent guide. Pieces are up to 20.5 x 27 cm (8” x 10.75”).

XRY-116 $22.95

True-to-Life Human X-Ray Set
Best for introductory anatomy lessons. Shows the bones without organs or soft tissue. These X-rays can be studied individually or arranged together to create a young adult sized human skeleton. Includes 18 films.

XRY-100 $29.95

Lung/Diaphragm Demo
Without a pump, how do some animals inflate their lungs? Pull down on the rubber diaphragm and the balloon lungs inflate; release and they deflate. Large enough for small groups to see, small enough to keep as an interesting item on your desk all year! ≈8.8 cm (3.5") tall. Colors may vary.

DIA-100 $19.95

Broken Bones X-Ray Set
Not for the squeamish. Shows a variety of common breaks. Comes with an explanation of bone structure and how bones heal when broken, and a guide to understanding each of the X-rays. Sturdy and reusable. Includes 15 films.

XRY-135 $29.95

Fixed Bones X-Ray Set
Explore the medical repair of broken bones! Authentic X-ray images show the hardware (plates, screws, nails, pins, and wires) used to fix a broken bone. Fourteen images of the fractures, printed on card-stock, correspond to the X-rays of the repairs. Students can act like doctors for the day! Place the images onto a light source to see the details, just like in a doctor’s office. Great for learners of all ages. Features 14 sturdy plastic X-rays, 14 broken bone images on cardstock, and guide. For ages 5+.

XRY-140 $19.95

Brain Mold - Gelatin
Great for students of any age! Useful in anatomy, biology, and injury prevention classes. Can be made to have the same color, size, mass, and consistency of a human brain. Instructions and suggested lesson plans included. (Gelatin not included.)

MOLD-100 $14.25

Tangle Proteins Building Set
Construct your own three-dimensional proteins. The Tangle Proteins Building Set is a tool for educators and students to understand the challenging structure of amino acids and DNA in a polypeptide chain. This kit is a one-of-a-kind tool for complete understanding of proteins; all you have to do is build them and the rest is history. Lessons included. Pieces are ≈1” long and 1/8” wide.

BIO-100 $39.95

Find lesson ideas and product videos at www.TeacherSource.com
**Life Science**

**Barn Owl Pellets**

These Barn Owl Pellets are perfect to demonstrate the nature of food chains and the role of predators in the ecosystem. Owl Pellets are a natural educational tool. Introduce skeletal anatomy and the identification of prey with our Owl Pellets from the wild—each unique in size, shape, and contents. Average size is 1.5" or longer.

The Owl Pellet Classroom Set includes 15 of our 1.5'+ Barn Owl Pellets. Great for a class of 30 working in pairs, this complete educational set also includes an instructor’s guide, 15 student guides, an 18" x 26" food web poster, 15 wooden dissecting probes, and a transparency of a vole skeleton (a favorite prey of the barn owl).

**OP-100** Barn Owl Pellets $2.75
**OP-200** Classroom Set $49.95

**Bone Sorting & ID Sheets / Poster**

An excellent aid in bone identification during your Owl Pellet dissection, these Bone Sorting Sheets compare the primary skeletal features of rodents, shrews, moles, and birds. 8.5" x 11" sheets are sold in packs of 15. This Bone Sorting Poster is 18" x 26", heavy low-gloss paper chart can be put up on the wall and referenced by your entire class during their exploration of Owl Pellets.

**OP-300** Bone Sorting & ID Sheets $4.95
**OP-350** Bone Sorting & ID Poster $5.50

**Soda Bottle Bird Feeder**

This simple, easy-to-use bird feeder fits any size plastic bottle with a standard cap size. Just attach the hanger, fill with bird seed, screw on the feeder base, and hang outside. Refills easily. Made from recycled materials. Colors may vary.

**BRD-300** $2.95

**Amber with Insect in Magnifying Box**

These beautiful amber samples, ranging from 1.5-2+ cm, have at least one small insect trapped inside. Each sample comes in a clear plastic case with a magnifying lens in the lid. The specimen can be removed for further examination under a microscope. Cases measure 2.5 cm square by 2.3 cm high. (1" x 1" x 0.875").

**AMB-200** $14.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Simulated ABO/Rh Blood Typing Kit

This kit offers the most procedurally accurate simulation of the blood typing technique available. Students in grades 5-college will test and determine the ABO/Rh blood types of four different samples by combining simulated blood and antisera, gently agitating the blood typing tray, and observing the results. Contains enough materials for 10 groups as well as a Teacher’s Manual and Student Study Guide copymasters. See our website for the extensive materials list.

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<th>Code</th>
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<td>CSI-555</td>
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DNA Model Kit

This beautiful DNA model coils and uncoils with a touch of the hand. It is ideal for showing base pairs and the near infinite combinations possible. 34” x 5” when fully extended, collapses to 9” high! Simple assembly required.

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<tr>
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Simulated “Blood” ABO Typing Class Kit

This kit lets students practice ABO blood typing while avoiding the risks associated with real blood. The clumping of simulated blood cells by corresponding simulated antibodies is done through chemical precipitation. Students observe the antigen-antibody relations of artificial bloods and sera. No human or animal blood or blood products are used because the reactions are based on chemical solubility.

- Perform blood typing without human blood
- Observe agglutination and typing of A, B, AB, and O blood groups
- This “health-risk free” kit comes complete for 60 students.

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<tr>
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Understanding Blood Type Interactions

In this investigation, students in grades 5-college will utilize simulated blood to determine the ABO/Rh blood type of four individuals, one in need of a transfusion. Students will then determine which of three potential donors would provide the best match for the patient in need. Kit contains enough materials for 10 groups. Teacher’s Manual and Student Study Guide copymasters are included.

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Genetics of Blood Typing Kit

This kit will help students in grades 5-college will learn about the genetics that determine blood type and how possible inheritance patterns may express themselves. Using simulated blood, students will determine the blood types of four unknown samples and use their results to help resolve a fictional paternity dispute. Contains enough materials for 10 groups, a Teacher’s Manual, and Student Study Guide copymasters. Also includes four Simulated Blood Samples, a bottle of Simulated Anti-A Serum, a bottle of Simulated Anti-B Serum, 40 Blood Typing Trays.

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Glo Germ™ Materials & Kits
A fun, safe way to teach about germs and how they spread. To demonstrate proper hand washing, have students rub Glo Germ lotion on their hands, and then wash their hands as they normally would. Under ultraviolet light, the Glo Germ Lotion fluoresces, showing students where the “germs” are hiding! Glo Germ Powder can be used to demonstrate how shaking hands can spread germs.

The Classroom Kit contains a portable ultraviolet light (6.5”), an 8 oz bottle of lotion, a 4 oz bottle of powder, and instructions. Excellent for demonstrations in a classroom setting. Includes four AA batteries.

The Group Presentation Kit contains an 18” ultraviolet light, an 8 oz bottle of lotion, and a 4 oz bottle of powder. (Ultraviolet light runs off AC electricity only.) Perfect for lecture halls and larger demonstrations.

Bacteria Growing Kit
Our Bacteria Growing Kit includes everything you need to get started—you just supply water and bacteria (don’t worry, it’s everywhere). Perfect for science fair experiments because so many variables can be tested for bacteria growth. In the right conditions, bacteria will usually start growing in four to five days.

Our Science Fair Kit includes six large plastic Petri dishes, nutrient agar powder, six extra-long wooden shaft cotton swabs, a stirring stick, a plastic beaker, and instructions.

The Classroom Kit contains 20 Petri dishes, agar powder, 20 cotton swabs, stirring stick, and instructions.

Serpent Skin™
The microscopic pores in the cellulose tubing produce a physical selection barrier—a semipermeable membrane. Serpent Skin may be used wet or dry. The equilibrium of particles moving through the membrane can be measured by changes in concentration, osmotic pressure, color, volume, or mass. The activities and experiments you can create with this fantastic product are limited only by your imagination. A sheet of ideas and experiments is included with every order. Sold in 12 m lengths.

$$ SM-200 \quad $14.95 $$
Forensics: Crime Scene Kits

Who Stole the Gold?
The gold is gone! Your students must work together in collaborative teams to figure out the thief's identity. With evidence collected at the scene, students will use forensic techniques to analyze soil, minerals, documents, fabrics and fibers, blood, fingerprints, and hair to solve the crime. Kit contains enough materials for 15 groups, and includes a Teacher's Guide as well as reproducible Student Study Guide copymasters. See our website for an extensive materials list. Grades 5-college.

CSI-580  $149.95

Case of the Lost Skull:
A Crime Scenario
Someone has left an animal skull stuffed with cash outside the school! But who? Students analyze fingerprints, blood, fiber, hair, and imprints, and document evidence over the course of about a class week. Includes all the evidence, full teacher guide on CD, student printables, and enough materials for 30 students. Also includes connections to other curricula, as well as field trip suggestions. (Microscope required—see page 123.) Grades 5-8.

CSI-710  Full Kit  $176.95
CSI-715  Refill  $91.95

Case of the Kidnapped Cookies:
A Crime Scenario
Found at the scene: a ransom note in Spanish, made from words cut from local newspapers with a strange red stain (lipstick?), white powder, and soil... Even the envelope containing the note has traces of DNA... Comes with all the evidence, full teacher guide on CD, student printables, and enough materials for 30 students. Includes information on staging your own trial! (Microscope required—see page 123.) Grades 5-8.

CSI-730  $169.95

Case of the Missing Mascot:
A Crime Scenario
Who took the school mascot? Students must try to discover the culprit before the Big Game! Activities include fingerprint and bite mark analysis, fiber flame test—even DNA analysis! Comes complete with all the evidence, full teacher guide on CD, student printables, and enough materials for 30 students to participate. There is even information on staging your own trial! Grades 5-8.

CSI-720  $169.95

Find lesson ideas and product videos at www.TeacherSource.com
Forensics

**NEW! Forensic Case Study: Drugs - Small Town, Big Problem**

The small community of Riverside has experienced a recent increase in drug-related crimes. Under orders of the mayor, the police department was tasked with investigating and solving the problem. Detectives have focused on six people—they believe one of them is the drug dealer. With this kit, your students will work for the Mapledale Forensic Analysis Lab to assist the police in identifying the most likely suspect. They will analyze a variety of forensic evidence including fingerprints, unknown powders, urine specimens, money, and handwriting samples. Kit includes enough materials for 15 groups. Teacher’s Guide and Student Analysis copymasters are included.

**CSI-590 $74.95**

**NEW! Forensic Drug Testing: A Simulated Immunoassay**

Because of the cost associated with confirmatory drug testing, a presumptive drug test is often performed first. Two of the most common presumptive drug testing techniques are immunoassay testing and thin-layer chromatography. Using this kit, students will perform a simulated immunoassay test on several urine samples to detect the cocaine metabolite benzoylecgonine. All urine samples and testing reagents are simulated to avoid the potential hazards of actual biological specimens while still providing realistic results. Kit contains enough materials for 15 groups. Teacher’s Guide and Student Study Guide copymasters are included.

**CSI-585 $51.95**

**Kidnapped! The Case of Jason Worth**

A missing heir. Money, power, and mystery. What happened to Jason Worth? Students will analyze blood, fibers, handwriting, and fingerprints as they work at solving this engaging whodunit. Kit contains enough materials for students in three classes of 24 to conduct the same tests as a real forensics team. This kit presents a compelling scenario that relates to biology, chemistry, and physics—tied together with all the intrigue and excitement of an actual criminal case! Grades 5-college.

**CSI-460 $73.95**

**NEW! Forensic Case Study: Murder at Eagle Nest Harbor**

A murder in a quiet house boat community sets the stage for your students to test their forensic knowledge. Does your class have what it takes to find the murderer? Students will take on the role of forensic technicians as they analyze hair, fiber, fingerprint, blood, and handwriting evidence to help identify the killer. This kit provides a unique and complex set of evidence, and includes enough materials for 15 groups to perform their analysis as well as teacher and student guide master copies.

**CSI-595 $74.95**

Call 203-74-TEACH (83224) or email info@TeacherSource.com
**Forensics**

**Plastic Magnifier 3X/6X**
Sturdy, inexpensive, quality magnifier. Dual lens 11.3 cm (4.5") long.

- **LEN-325** Plastic Magnifier
  - 20 or more
  - $1.00
  - $0.75 each

**The Private Eye Loupe**
This high quality jeweler’s 5X magnifying loupe is used throughout The Private Eye book. These simple magnifying lenses can accommodate large and small hands alike!

- **EYE-231** Private Eye Loupe
  - 10 or more
  - $3.95
  - $3.50 each

- **EYE-242** Box Set of 18 Loupes
  - $69.95

**The Carter Creek Mystery**
The thriving community of Carterville has been growing in leaps and bounds. After a long stretch of a bad economy, Carter Creek Paper and Plastics has doubled its business. This means more jobs, opportunities, and $$$ for the area! But there is a dark cloud on the horizon: the creek has been polluted! Your students have been hired by a local chemical testing laboratory to find the nature of the contamination and locate its source.

- **CSI-450** $79.95

**The Lois McArthur Mystery**
All the intrigue, mystery, and excitement of an actual case arrives at your school in a cost-effective way with this kit. A single scenario that relates biology, chemistry, and physics tools to criminal investigations. Each student in three classes of 24 will be able to conduct blood, fiber, fingerprint, and handwriting analysis.

- **CSI-455** $79.95

**Crime Scene Investigations**
Students in grades 6-12 are challenged to conduct lab tests, document results, and try to meet the standard of proof needed to solve crimes. The crimes range from check forgery to murder and include the use of fiber analysis, skeletal evidence, and fingerprinting techniques. 68 lessons, paperback, 288 pages.

- **BK-925** $31.95

Find lesson ideas and product videos at [www.TeacherSource.com](http://www.TeacherSource.com)
Forensics: Supplies

Bi-Chromatic Fingerprint Kit

With this professional fingerprint kit, you can dust for prints on many different surfaces. The powder appears black when dusted on a light colored surface, but silver when dusted on a dark-colored surface. Lifted prints are always black. The Zephyr brush is easier to use and requires much less powder than a camel's hair brush. Kit includes a 60 cc (2 oz) jar of powder, 9.1 m (360”) roll of 5.1 cm (2”) wide clear lifting tape, a Zephyr fiberglass brush, 100 white 7.6 x 12.7 cm (3" x 5") latent print backing cards, and instructions.

CSI-200 $43.95

CSI-212 Bi-Chromatic Powder, 60 cm³ (2 oz) $9.25
CSI-216 Bi-Chromatic Powder, 473 cm³ (16 oz) $29.95
CSI-221 Zephyr® Brush $15.50
CSI-227 Roll of Lifting Tape $10.95
CSI-234 100/pk Latent Print Backing Cards* $14.25

*No forensics classroom is complete without these cards. Simply dust for latent prints, lift with tape, and apply to the shiny side of these 3” x 5” cards to preserve the prints as evidence. To be used with replacement supplies above.

CRIME SCENE DO NOT CROSS Tape

Give your next forensics lesson an authentic feel with our official Crime Scene Barrier Tape. Available in economic thousand-foot rolls, now you can afford to cordon off your entire classroom! 7.6 cm x 304.8 m (3" x 1,000’)

CSI-100 $27.95

Fingerprint Cards - Standard FBI Applicant

Have your students practice taking and comparing fingerprints. Do any fingers have the same pattern? Do brothers and sisters have similar fingerprints? Try lifting a fingerprint from a glass and comparing it to a set of known fingerprints. 50 cards.

CSI-313 50 cards $13.25

Ink Pads

These Identicator® pads can be used on any paper. With clean ink technology, the slight residue left on the fingers can be easily removed by rubbing them together or wiping them clean with a towel or cloth. No ink-removing cleaners needed.

CSI-300 $12.95

Official Paper Evidence Bags

These are genuine evidence bags used by police and crime investigators. They are printed with evidence labels for recording such information as Case Number, Date, Time, Location, Description, and Chain of Custody. 20.3 x 15.2 x 38.1 cm (8” x 6” x 15”). 50 bags. Make great lunch bags!

CSI-115 50 bags $19.95
Multi-Fiber Ribbon Refill

This ribbon consists of eight different fiber strips woven together into a single ribbon. It can be used to test different commercial dyes such as Rit and Kool-Aid, and natural dyes such as goldenrod and grape juice. Note how each of the fabrics is stained differently. Use to identify a piece of unknown fabric. One yard may be cut into more than 60 test strips!

SM-600 Multi-Fiber Ribbon $7.95 / yard
6-49 yards $7.75 / yard
50 or more yards $7.25 / yard

Multi-Fiber Unknowns - Refill

This kit consists of eight different pieces of fabric, each represented in the Multi-Fiber Ribbon. The eight 4” x 12” pieces of cloth can be divided into more than 200 unknown samples of cloth for students to identify using the Multi-Fiber Dyes (SM-605).

SM-610 Multi-Fiber Unknowns $24.25
Earth & Space: Rocks & Minerals

Geodes
Each of our beautiful 2.5-5 cm (1-2") Small Geode Pairs have been cut and polished. Set of two halves.

The 1/8" thick Geode Slices are beautifully colored and highly polished. You can clearly see each layer of the different minerals. Approximately 2-3" across. Slices are stained to easily show mineral layers. Pack of six. Colors may vary.

Geodes for Splitting are an exciting addition to any earth science, geology, or rock & mineral unit. Sorted by density, many are hollow and can be easily split open to reveal a variety of crystal formations within. Remember to wear your safety goggles (page 126). Six/pkg.

The Starter Geode Kit includes four real geodes from two different mines. Includes premium geodes that are guaranteed to have a variety of incredible crystals inside, safety goggles, a geode display stand, a high quality information guide which will teach your young scientist all about geodes and help identify the crystal formations inside, and an activity booklet with 10 additional puzzles, games, and challenges.

RM-500 Small Geode Pairs $4.95 / set
RM-510 Six Geode Slices $8.25
RM-540 Geodes for Splitting $19.95 / pkg of six
RM-510 Starter Geode Kit $19.95

Floating Rocks!

Class Set of 25 Pumice Samples
Your class will erupt with excitement as each student explores and observes the product of an actual volcano. Pumice is a lightweight igneous rock, formed when lava cools quickly above Earth’s surface and traps gases before the molten material solidifies. As a result, it contains so many air holes that it floats in water!

RM-315 $5.95

Without UV Light
In UV Light

Fluorescent Mineral Set
These common fluorescent minerals are sensitive to long-wave ultraviolet (UVA) light and can be made to fluoresce using any of the fluorescent “black lights” in this catalog. Fluorescence is sometimes used to identify certain minerals and can change some rather ordinary looking rocks into marvels of colors and light. Once your students see these samples, they will be eager to test all the rocks they find and they won’t forget this uncommon addition to any mineral unit. Each set contains at least four samples.

RM-400 $14.25

UV Lights (Additional info on page 74)
UV-641 Portable UV Light $11.95
UV-605 18” Fluorescent UV Black Light $25.95

Mineral Sorting Kit
Use a simple identification “key” to sort 15 small rough and polished rock and mineral samples. The special key is large enough for students to place the specimens directly on it. The kit includes rocks and minerals such as mica, quartz, calcite, amethyst, pyrite, plus 10 others. This kit has been successfully field tested in hundreds of classrooms with students in grades 2-5. Contains small samples. For ages 7+.

RM-6 Mineral Sorting Kit $13.95
10 or more kits $11.95 each

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Earth & Space: Rocks & Minerals

Earth & Space: Rocks & Minerals

Sticky Stones
Don’t be fooled by these seemingly normal stones; they’re magnetic! Build fun structures and explore the theory of magnetism with these unusual and entertaining stones. Shapes and sizes may vary.
- RM-150 ½ lb (~10-20 rocks) $6.95
- RM-155 Two lb (~50-70 rocks) $24.95

Obsidian Arrowheads
Students are always fascinated when something mundane like a rock is formed into something useful like an arrowhead. These recently-made large arrowheads were hand-crafted from volcanic obsidian. Each is unique. A great demonstration tool when teaching about Native Americans, igneous rocks, or man’s early use of tools. Each arrowhead measures 5-7.5 cm (2-3") long. Available individually or in packs of 15 or 30. Caution: Arrowheads are sharp!
- RM-200 Arrowhead $1.50
- RM-205 Pkg of 15 $8.95
- RM-210 Pkg of 30 $14.95

Hardness/Streak Test Kit
Help identify a mineral by determining its hardness and performing a streak test. The collection of nine minerals represents the Mohs hardness scale from #1 (talc) to #9 (corundum). In addition, the kit includes instructions, a streak plate, and a field pouch.
- RM-410 $13.95

One Pound of Mica
Everyone loves to pull apart the layers from a specimen of mica. These mica specimens from New England will provide samples for at least 30 students. Sold in one-pound packages.
- RM-910 $10.95

Rocks, Fossils, Minerals & Gems
Each set of 21 specimens comes in a labeled display case that can be opened for closer inspection. A great addition to your Earth Science classroom or for any young collector! All sets come in clear 7” x 3.5” cases.
- RM-800 Rocks, Fossils, Minerals and Gemstones of the US $8.95
- RM-810 Native Rocks - Foundations of the Earth $8.95
- RM-820 Natural Gemstone Collection - Jewels in the Rough $8.95
- RM-830 Complete Set of Three $21.95
Earth & Space: Crystals

Rock Candy Crystal Growing Experiment Kit

While quartz crystals take tens of thousands of years to grow in nature, you can grow crystals of sugar in only a few days! In the process, students learn about saturated and supersaturated solutions, seed crystals, and the rate of crystalline growth. Includes a glass jar with lid, five seeded wooden sticks, enough sucrose to grow one rock candy stick, and a study guide with complete instructions. More rock candy sticks can be grown using ordinary sugar and the additional seeded sticks. You will need to provide a saucepan, spoon, measuring cup, a stove or hotplate, and adult supervision.

RM-100 $16.95

Mrs. Stewart’s Liquid Bluing

Grow beautiful crystal gardens with bluing, table salt, household ammonia, and food coloring. For more than 50 years, this has been a favorite activity of teachers and children of all ages. 237 ml (8 oz).

SM-10A One Bottle $5.50
SM-10B Case of 12 $45.95

Fulgurite Lightning Fused Sand

These tubular formations are typical of the result when nearly one billion Joules of lightning energy strikes sand. With temperatures reaching 30,000 degrees Kelvin, the sand is melted or vaporized, leaving behind these amorphous glass tubes. ≈2” long sample. Colors may vary.

RM-640 $24.95

Calcite Crystals Iceland Spar

If you look at the words on a printed page through this crystal, you’ll see double. These natural, nearly transparent crystals exhibit the property of “birefringence,” i.e., they can break light into two distinct polarized beams. Each crystal is about 2 x 2 x 4 cm.

PF-2 $6.95

Bismuth Crystal

These man-made bismuth crystals are cubic and iridescent, giving them a unique, otherworldly appearance. Each specimen is 12-17 g and has a density of 9.81 g/cc.

RM-520 $8.95

Crystal Growing Dolomite

Sometimes called “Popcorn Rocks,” these gray dolomite samples grow dazzling, white Aragonite crystals when placed in a small amount of white vinegar. The crystal growing takes approximately one week. Samples of dolomite and complete instructions provided.

RM-390 Single Large Sample $2.95
RM-350 Class Set of 25 Samples $8.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Earth & Space: Fossils & Dinosaurs

Large Fossil Collection

This high-quality collection of 24 fossils spans a vast time period in prehistory. It's a handy survey of easily-identifiable fossils and an excellent way to support an Earth Science or Geology unit. Every set includes 24 different fossils along with helpful information cards related to each specimen. Fossil selection may vary; possible samples include dinosaur eggshells, shark teeth, ammonite, crinoids and more.

RM-135 Large 24 Fossil Collection $49.95
RM-142 Small 10 Fossil Collection $15.95

Fossil Shark Teeth

Our Fossil Shark Teeth collection from Morocco is a fantastic chance for your students to own a piece of history at an amazing price. Each bag is unique. You will find various types of shark teeth in sizes ranging from juvenile sharks to adults. You'll also likely find a few fossilized sting ray teeth, small vertebrae, and fragments of bone. Ideal for sorting and predicting activities. At this price, you can let all your students keep a fossil to start their own collections!

RM-11A ½ pound $13.95
RM-11B 1 pound $21.95

NEW! Spinosaurus Tooth

Spinosaurus (meaning “spine lizard”) was an opportunistic predator who stomped through North Africa over 100 million years ago, eating small and large prey—including other dinosaurs. It is estimated to have been the largest of all known carnivorous dinosaurs, up to 60 feet long, weighing 20 tons. Our Spinosaurus Tooth was collected in Morocco and is preserved in a Riker Mount specimen box that can be easily opened to more closely examine this fossilized tooth. Box is approx 11 x 14 cm (4.25” x 5.375”). Tooth specimens will vary slightly in size, weight, and color.

FSL-850 $19.95

Woolly Mammoth Hair

The Woolly Mammoth roamed throughout the northern North American continent, northern Europe, and Siberia. Occasionally in the permafrost areas of northern Siberia a mammoth is uncovered with hair preserved. The hair in this 3” x 5” acrylic frame is at least 10,000 years old and was found in the Taimyr Region of Siberia, Russia.

RM-750 $14.95

Disappearing Dinosaurs Mug

Dinosaurs once ruled the entire planet. Thanks to this clever mug, you can watch eons pass before your eyes over a cup of coffee. The mug shows a prehistoric landscape populated by fierce dinosaurs. But when you pour in a hot beverage, the dinosaurs transform into fossils in a museum exhibition. Microwave safe, hand wash only. ≈350 mL (12 oz).

MUG-185 $12.95
Earth & Space: Fossils & Dinosaurs

Fossil Sorting Kit

Each two-pound bag typically contains more than 100 assorted fossils along with a sorting guide. This kit is perfect for introducing students to organisms that existed over 400 million years ago! The sorting guide includes pictures of many of the fossils along with information about their approximate age and modern relatives. Kit typically contains fossilized ammonites, trilobites, coral, gastropods, and at least three other types of fossils. While we do our best, we cannot guarantee exactly which fossils or how many of each will be in each package.

FSL-800  $14.95

PerfectCast Casting Medium

Far better than ordinary plaster, PerfectCast is the professional’s choice for casting complex fossil replicas. Simply add to water. PerfectCast dries as quickly as Plaster of Paris and is five times as strong. It is AP nontoxic and reproduces intricate detail identical to the original mold. Sold in four-pound bags. One bag will make about 20 large 4" T-Rex teeth.

FSL-315  $9.95

Tooth & Claw Molds

These professional quality Latex rubber molds can be used to make hundreds of three-dimensional fossil replicas. Use a rubber band to hold the two halves of the mold together, pour in some PerfectCast casting medium and in about 30 minutes your students will have a perfect fossil replica. The finished casting may be painted to give it a completely realistic look. Instructions included!

FSL-100  3" Tyrannosaurus Rex Tooth Mold  $10.95
FSL-105  Large 4" T-Rex Tooth Mold  $12.95
FSL-110  Oviraptor Claw  $10.95
FSL-120  Shark Tooth  $10.95
FSL-130  Deinonychus Claw  $10.95
FSL-150  Set of five Tooth & Claw Molds  $47.95

Fossilworks Fossil Molding Kit

This kit comes with six high-quality, reusable seamless rubber molds (ammonite, crinoid, trilobite, cavebear tooth, shark tooth, and raptor claw), four pounds of PerfectCast casting medium, extensive background information on each fossil, and suggested exercises for students. ≈3-5" long each.

Note: the molds included with this kit are different than our individual molds. They are single sided with a flat bottom for easy displaying and painting.

FSL-250  $59.95
Earth & Space: Environmental Science

Clean Water Science Kit
Everything you need to conduct water purification experiments—just add water! You can build a tabletop version of a water filtration system, construct a miniature sea water desalination plant, disinfect water with solar power, and much more. A great demo for the classroom, rainy day science activity, or science fair project.

GRN-400 $13.95

Climate Change Mug
Add hot water and observe as Florida and California disappear, and Central America becomes just a chain of islands! This mug reminds us of the consequences of climate change. Watch what happens when our polar icecaps melt and the oceans begin to rise. Microwave safe, hand wash only, 170 ml (8 oz).

MUG-205 Climate Change Mug $12.95
MUG-210 Set of six $64.95

Weatherglass Barometer
When water moves up the spout, expect stormy conditions; when water moves down the spout, good weather is on its way. This hand-blown glass bulb contains trapped air that expands and contracts with changes in atmospheric pressure. Since 1643, many seamen have used this simple and accurate device to predict the weather. ≈15 cm (6") tall. Colors may vary.

BAR-130 $19.95

Eco-cell Barometer
The Eco-celli Barometer is safe, easy to use, and incredibly accurate! The 162 cm (64") long, securely fastened, U-shaped glass tube is filled with red, nontoxic silicon oil. The adjacent 81 cm (32") calibration tube is a sealed blue alcohol thermometer, complete with a sliding scale between the two tubes to compensate for the expansion of the oil due to temperature. Mounted on clear acrylic for easy viewing. Measures in both millimeters and inches of Hg. 92.7 x 14.6 x 3.2 cm (36.5" x 5.75" x 1.25").

Advantages of an Eco-celli Barometer:
• Contains No Mercury
• Accurate
• Easy to Read
• Applies Boyle’s Law
• Inexpensive
• Replaceable Components

BAR-200 Eco-celli Barometer $269.95
BAR-210 Replacement Thermometer Tube $89.95
BAR-215 Replacement Barometer Tube $155.95

About 3 feet tall!

Find lesson ideas and product videos at www.TeacherSource.com
Earth & Space: Environmental Science

NEW! Weather Station Science Kit

Measure the weather right in your back yard or school yard. Follow wind direction, temperature, rainfall, and more. Discover the greenhouse effect by creating your own enclosed growing environment. Contains plastic tube, thermometer, two halves of support column, funnel, rain gauge support arm, wind vane support arm, anemometer support arm, thermometer support arm, compass, wind vane, anemometer cups, short spindle, long spindle, cap, anemometer hub, screws, and detailed instructions. Completed station measures 8.5" x 4.75" (22 x 12 cm.)

GRN-170 $13.95

Oil Spill Kit

Our Oil Spill Kit is a lively way to conduct a four-day interactive lesson with your class. Adaptable for students in grades 3-12. Your students must design and carry out a plan to clean their oil spill. What is the best way to clean an offshore oil spill? It depends on water conditions, the effectiveness of the materials, the limits of funding, and a host of other factors. The kit contains a variety of oil absorbent materials—including our best-selling Envirobond—as well as a unit guide, lesson plans, resource sheets, and student printables.

ENV-100 Oil Spill Kit $49.95
ENV-110 Refill $23.95

Envirobond

Envirobond is a unique long chain polymer that is hydrocarbon specific. It will only absorb and molecularly bond with hydrocarbons while repelling any water. No mixing required. Works with lubricating oils, vegetable oil, diesel, gasoline, etc.

ENV-120 227g. (½ lb) $8.95
ENV-125 454g. (1 lb) $17.95

Water Works Water Test Kit

This amazing test kit and teacher’s guide contains enough materials for a class of 30 students to test water for nine factors twice—that’s 540 tests in every kit! Each kit includes 60 individually wrapped test strips for each of the following factors:

- Total Chlorine
- Nitrate
- Free Chlorine
- Nitrite
- Total Hardness
- Copper
- Total Alkalinity
- Iron
- pH

Each test is easy to use; simply moisten the test strip with your water sample and compare to the included color chart. The teacher’s guide contains background information along with instructions and simple activities. If you study the water cycle, ground water contamination, or pollution, this kit is a perfect way to add some hands-on science to your unit.

WTR-100 $99.95

Weather Science Kit

With this exciting kit, your students can explore six basic weather phenomena. Experiment with static electricity that causes lightning, make your own clouds, build a desktop water cycle model, observe the movement of air currents, explore climate change and the greenhouse effect, and learn about the harmful impact of acid rain. Includes detailed instructions with fun facts. For ages 8+.

GRN-420 $12.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
NEW!
The Apollo 11 Adventure Kit

The Apollo 11 Adventure Kit is a unique way to commemorate the 50th anniversary of this dramatic moment in space history. Our exclusive kit includes an autographed copy of the award-winning children’s novel, I Love You, Michael Collins, along with Astronaut Ice Cream, six packets of Tang, six Rocket Film Canisters, six seltzer tablets, six full-color 8” x 10” free photos from NASA, and a thematic Teacher’s Guide.

I Love You, Michael Collins is the heartwarming, award-winning fictional account of a girl who chooses the only astronaut who stayed with the Apollo 11 ship as her pen pal during the summer of 1969. (240 pages, paperback).

AST-655    The Apollo 11 Adventure Kit    $24.95
AST-650    I Love You, Michael Collins book    $7.95

Astronaut Ice Cream

In space, no one can hear ice cream! These specially preserved ice creams are freeze-dried and require no refrigeration. Just open and eat! Each individually wrapped ice cream comes in a package that describes the freeze-drying process. Three flavors in each package.

FD-100    Astronaut Ice Cream    $3.75
FD-110    Case of 100    $299.95

Real Meteorites

Most meteorites from outer space burn upon entry into Earth’s atmosphere and are seen as “falling stars.” Because meteorites are naturally occurring, specimens will vary in size, mass, and color. Each is beautifully mounted in an 8 x 11 cm (3.25” x 4.25”) Riker Mount Specimen Box that can be opened to more closely examine the specimen. All meteorites are 4-16 grams.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Name</th>
<th>Year</th>
<th>Location</th>
<th>Price</th>
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<tr>
<td>RM-453</td>
<td>Campo del Cielo Shrapnel</td>
<td>1576</td>
<td>Gran Chaco Gualamba, Argentina</td>
<td>$29.95</td>
</tr>
<tr>
<td>RM-455</td>
<td>Nantan</td>
<td>1516</td>
<td>Qunag Xi, China</td>
<td>$29.95</td>
</tr>
</tbody>
</table>

Sunspotter Solar Telescope

This safe Folded-Keplerian telescope is easy to use and suitable for students of all ages. The Sunspotter projects an image of the sun where sunspots are clearly visible. Perfect for teaching about the sun spot cycle! Makes a great gift for any aspiring astronomer!

SUN-100    $429.95

Constellations Knowledge Cards

A concise but highly informative look at 47 star groups. Each card has a chart of a constellation on the front. On the back, read about the constellation’s position and area, brightest star and number of visible constituent stars, and zodiac sign along with notes about the constellation’s origin and history. ≈3.25” x 4” (≈8.25 cm x 10 cm).

CARD-450    Deck of 48 cards    $10.95

Find lesson ideas and product videos at www.TeacherSource.com
Microscale Vacuum Apparatus

Students can now safely produce a vacuum in a small bell jar at their lab stations. By reducing the pressure in the microscale bell jar, they can expand a balloon, boil warm water, and even transfer liquids from one pipet to another. Students are able to actively experiment on their own and observe the results right before their eyes. Kit includes 8.5 cm (3.5") bell jar, base plate, vacuum pump syringe, suction cup, balloons, pipets, instructions, and Ron Perkins’ Thirteen Open-Ended Challenges.

VAC-10  Microscale Vacuum Apparatus  $35.95
VAC-16  Class Set of Six Vacuum Apparatus  $192.70
VAC-115 Replacement Tube Assembly  $12.95
GAS-140 60 cc Replacement Syringe  $2.75
GAS-145 30 cc Replacement Syringe  $2.50

Finally, a way for your students to do hands-on vacuum experiments safely at their desks—elementary level through college!

Pressure Pullers

What keeps these cups together? Suction or air pressure? These cups are very simple to use: no vacuum pump—just two levers—yet they are incredibly difficult to pull apart. A great way to illustrate the concept that air pressure, not suction, is forcing the cups together. Have your students calculate, based on the area of the cup and the standard air pressure, just how much force is required to pull the cups apart. Sold in sets of two. ≈12 cm (4.75") diameter.

SC-300  Pair  $11.95

The World’s Most Useful Suction Cup!

“Lil’ Suctioner”

This device is so simple, it’s mind boggling. Simply slide the soft foam ring over a soda can or beaker and it sticks tight—really tight—to any smooth tabletop surface. Inadvertently invented by Mike Adjeleian, our “suctioners” use air pressure to hold in place all sorts of circular containers (up to 3" diameter). Great for the lab, your desk, or even at home. Printed with a variety of air pressure facts. Comes in assorted styles.

SC-100  Pkg of three  $10.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Air: Air Pressure

Atmospheric Mat
There’s nothing like a discrepant event demonstration to bring an abstract concept to life. Our Atmospheric Mat offers a dramatic introduction to the concept of air pressure. Invite your students to pick up the mat. No matter how hard they pull on its sturdy metal hook, this mat will not budge! Is it some kind of suction trick? Nope! It’s just air pressure. The room’s air pressure is so much greater than the pressure under the mat that—in effect—the air itself is holding the mat in place. Works on almost any smooth surface. Measures 26.6 x 26.6 cm (10.5" x 10.5").

AIR-280 $21.95

Bernoulli’s Principle Class Kit
Our kit provides everything you need to demonstrate the relationship of air speed and air pressure for students in grades 4-8. The lessons can easily be adapted for younger or older students. Materials for 25 students. Includes 25 funnels, 28 ping pong balls, 50 flex straws, roll of kite string, 100 cards, 50 toothpicks, and detailed instructions.

AIR-500 Bernoulli’s Principle Class Kit $22.95
AIR-505 Replacement Straws (pkg of 400) $7.95

Harbottle Differential Pressure Demo
Use this beautiful glass globe to teach your students about the amazing properties of air pressure. Simply stretch the neck of the balloon over the mouth of the bottle and blow into the balloon. Once it’s inflated, insert the rubber stopper into the hole at the bottom of the bottle. The balloon remains inflated though nothing seems to be stopping the air from escaping! A great starter for atmospheric pressure discussions. Colors may vary.

AIR-275 $23.95

Bernoulli Blaster
You provide the fast moving air, and we’ll take care of the rest! Easily demonstrate the unexpected effects of low air pressure with an electric leaf blower or vacuum cleaner (exhaust mode). A fast stream of air across the top of this device reduces air pressure in the tube. Ambient air pressure propels the ping pong balls upward, in apparent defiance of gravity! Instructions included and available online.

AIR-550 $6.95
**Air Power Soccer Disk**
The Air Power Soccer Disk is perfect for demonstrating Newton’s Third Law of Motion: for every action, there is an equal and opposite reaction. The soccer disk glides on a cushion of air in a nearly frictionless environment. Uses four AA batteries (not included). 18.4 cm (7.25") diameter.

**Hovercraft Class Kit**
The principle behind the Hovercraft’s levitation is that when air is released from the balloon, the air hits the ground and rushes outward in all directions. The air flowing from the balloon through the hole forms a layer of air between the Hovercraft and the table. This reduces the friction that would have existed if the Hovercraft rested directly on the table. With less friction, your Hovercraft scoots across the table.

This kit includes everything you need to make your own balloon Hovercrafts, including one dozen pre-drilled film canisters, one dozen balloons, one dozen CDs, and one strip of poster putty. Instructions can also be seen in our online video. Colors may vary.

---

**Hover Racer**
Build your own motorized Hover Racer and watch it skim smoothly across the floor on its cushion of air. A fun science project and fantastic science fair idea. This kit includes a detailed instruction manual plus relevant information about the history and science behind the hovercraft. Uses four AAA batteries (not included). Not meant for use in water.

**UV No-Pop Bubbles!**
Amazing No-Pop Bubbles, with a new twist! Under a UV/black light, these bubbles glow brilliantly. They work especially well with our UV Lights (page 74). You won’t believe your eyes!

**Amazing No-Pop Bubbles!**
Blow these incredible bubbles, wait 10 seconds, then reach out and catch them on your fingers! They don’t pop! Must be seen to be believed. In a dry environment, No-Pop Bubbles will last for weeks!
Air: Flight

Dip-er-do Stunt Plane

These amazing, durable planes perform loops and circles and come back to you every time! Mike Stone amazed us all with the original Dip-er-do, and now these planes are featured at the national Air and Space Museum! Each plane comes with cool stickers and adjustable elevators and flaps. Graphically demonstrate the four forces involved in flight and what happens when lift is greater than weight!

SS-20 Pack of two Dip-er-do Stunt Planes $3.95
SS-20B Class Set of 30 (15 packs) $41.95

HandCopters

To launch, simply place the HandCopter’s plastic shaft between both hands and spin counterclockwise. These colorful copters can be used for dozens of scientific investigations. Why won’t the HandCopter work if launched clockwise? How does this simple “toy” illustrate the Bernoulli Principle? Students can test different variables to determine what will make the HandCopter stay aloft longer or fly straighter. Illustrate the principles of gravity, force, and motion as well as the principles of flight including camber, lift, center of gravity, and momentum. Each package contains five HandCopters. Colors may vary. 7.5” long.

AIR-430 Pkg of five $6.95

SnapCopters

Fly what may be the world’s smallest helicopter with a snap of your fingers. Illustrate the principles of flight including camber, lift, center of gravity, and momentum. Each package contains 16 SnapCopters. Colors may vary. 1.5” long.

AIR-425 Pkg of 16 $3.95

Flying Butterfly

Wind up this clever little device and hide it inside a book or greeting card. When it is set free, the butterfly will spin and fly up to 20 feet in the air! Amazing! 4.5” x 4.25”

AIR-480 $3.95

Aero Copter

Catapult the Aero Copter into the sky with the rubber band launcher, and watch it fly! When the Aero Copter reaches maximum height, its blades open and it spins down to the ground, with an LED light illuminating its descent. Best flown at night. 12/pkg. Colors may vary.

AIR-222 Pkg of 12 $9.95
### Bubble Timer

The Bubble Timer is a beautiful display of physics, surface tension, and geometry! Just turn it over to watch the colored liquid displace the air in the bottom bulb, creating more geometric bubbles every time! Takes approximately one minute. Colors may vary. ≈20 cm (7.5") tall.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>TIM-212</td>
<td>Bubble Timer</td>
<td><strong>$8.95</strong></td>
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</tbody>
</table>

### Self-Inflating Balloons

Squeeze a flat, colored balloon and watch it self-inflate! Challenge students to offer an explanation. Then have them observe the clear, colorless balloon self-inflate. Ask your students to construct their own self-inflating balloon using water and baking powder, or vinegar and baking soda! Four self-inflating Mylar balloons are included: two colored and two colorless. 14.5 cm flat dia. (5.75"). Styles may vary.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>AS-800</td>
<td>Set of four Self-Inflating Balloons</td>
<td><strong>$6.95</strong></td>
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### Rocket Balloons

A great way to demonstrate basic principles of Newton’s Laws to students. In order for a rocket to be stable, the center of gravity must be forward of the center of pressure. Rocket Balloons are properly weighted to create stability, unlike ordinary balloons.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>RKT-140</td>
<td>Pkg of 40 Balloons with Pump</td>
<td><strong>$12.95</strong></td>
</tr>
<tr>
<td>RKT-145</td>
<td>Balloon Refills (21 Balloons)</td>
<td><strong>$4.95</strong></td>
</tr>
</tbody>
</table>

### New design!

### Balloon Helicopter

These balloon-powered helicopters are great for outdoor or indoor fun (if you have high ceilings). Simply snap the blades on the hub, place the balloon on the collar, inflate the balloon, and you’re ready for lift off! When you release, air travels through the blades, causing them to spin. Lift is created and off it goes! We’ve gotten these to fly over 20 feet high. Blow up the balloon again to relaunch. Colors may vary.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>AIR-610</td>
<td>Balloon Helicopter</td>
<td><strong>$1.95</strong></td>
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</tbody>
</table>
Air

Demonstrate a vortex in your classroom! Some people refer to it as a tornado in a bottle. These amazing connectors screw onto two plastic soda bottles (see our 1-Liter Soda Bottles on page 39) and allow students and teachers to create a water vortex, showing that in order for water to flow down, air must flow up. Colors may vary.

**Tornado Tubes**

- SS-1 Tornado Tube $1.95
- SS-120 40 Tubes $60.00
- SS-125 80 Tubes $110.00
- SS-130 120 Tubes $150.00

**Wizard Stick Fog Generator**

When you need a convenient source of fog to help visualize convection or an airflow experiment, the last thing you need to worry about is setting off the smoke alarm! This Wizard Stick produces a stream of safe, condensed vapor droplets and contains no actual solid “smoke” particles to set off the alarm or cause injury. Using the same special effects technology found in Hollywood films, the Wizard Stick is safe, non-toxic, easy to use, and cost effective. Each Wizard Stick includes 3 oz of Fog Fluid (fluid refills available). Requires six AA batteries (not included). Colors may vary.

- ZL-200 Wizard Stick Fog Generator $29.95
- ZL-150 Super Zero Fog Fluid Refill (3 oz) $5.50

**Fountain Connection™**

Connected to two clear 2-liter soda bottles, a fountain erupts every time the bottles are turned over. This is the modern version of Hero of Alexandria’s 2,000-year-old fountain. Two 2-liter soda bottles required. Colors may vary.

- SS-10 Fountain Conn. $3.95
  - 10 or more $3.75 each

**Pet Tornado**

Spin the Pet Tornado clockwise and watch a mini tornado form before your eyes. The vortex forms and fades just like a real tornado. ≈11.5 x 4.5 cm (4.5" x 2"). Information on the back describes the Fujita tornado scale. For ages 7+.

- AIR-260 $5.95

Kid Favorite!
Air

Air Zooka! Vortex Launcher

This amazing device launches an invisible vortex of air up to 20 feet. Powerful enough to blow out a candle from across the room! Safe for classroom use because it launches no projectile, only a strong puff of air. The Air Zooka really will "blow away" your students. Try it with our Diffusion Mist (page 79) for vortices you can see! Easy to assemble and use. No batteries required. Colors may vary.

AIR-200 $19.95

Takes as many as 70 breaths to fill...or just one breath if you understand Bernoulli’s principle!

WindTubes

Fantastic for teaching the properties of air, Bernoulli’s Principle, and even for building structures! WindTubes are like balloons that don’t stretch. They are not elastic. About eight feet long and 10 inches in diameter, they are huge! The illustrated instructions include over a dozen creative and educational activities that you can do with WindTubes. The inventor Doron Gazit suggests connecting them together with simple rubber bands to create space frames or even Buckminster Fuller structures. Packs of four come in assorted colors. Rolls of 250 are all one color. Sorry, no color choice.

WIN-600 Four Assorted Color WindTubes $6.95
WIN-610B Roll of 250 Single Color WindTubes $298.95

Milk Bottle & Egg Demo

Use this sturdy glass milk bottle for an egg-cellent demonstration of air pressure. All you need is a hardboiled egg and a little bit of fire. If you drop some lit paper inside the milk bottle and then place the egg on top, the fire goes out and the egg is mysteriously pushed into the bottle, intact! Warm air expands, cool air contracts—it’s the cooling of the heated air inside the bottle that allows the atmosphere to “push” the egg inside.

BOT-800 $14.25
Density

Solar Tube
10 Feet Longer than Any Other on the Market!

Watch this amazing tube gently lift into the air. At 60 feet long with a 72 inch circumference, this is the largest Solar Tube available. Run to fill with cool air, tie off the end, and move it into the sun. As the bag heats, the 240 cubic feet of air expands, becomes less dense, and floats. A great demo of density, thermodynamics, solar energy and more. Hold onto the string! Our Solar Tube is made from thin plastic in order to float; use care when handling for best results. Includes tube, string, and instructions.

SLR-222  $14.95

Try with our Beaker Mugs (page 134)

Density Paradox

When this solid object is initially placed in water, it sinks. But wait about 60 seconds, and it mysteriously floats to the surface. When removed and placed in different water, it continues to float initially and, in about 60 seconds, mysteriously sinks. (The first beaker contained hot water; the second beaker contained ice water.) Set of two. Colors may vary.

DEN-300  Set of two  $14.95

Absolutely amazing to see, our Solar Tube teaches many scientific principles, such as density and buoyancy.

Using our Infrared Thermometer (page 130) measure the temperature of the filled Solar Tube. Ask students to predict the temperature needed for lift off!

Up, Up, and Away! with our 60-foot long, 72" circumference Solar Tube!

Super Twine Kite String

This string is the perfect tether for home-made kites or our Solar Tubes. Each plastic roll is wrapped with ≈70 meters (200 feet) of thin twine with the loose end conveniently taped under the label. Students can easily tie two or three rolls together for even longer lines. Tell your entire class to go fly a kite, and at this price they can even take their strings home!

SM-20A  Case of 12 rolls  $15.95
SM-20  Case of 36 rolls  $36.95

Floating Coins

These real Japanese 1 Yen coins are made from aluminum and can be made to float on the surface of water. Use a paper clip to gently lower the coin into the water and it will float on the surface! Adding a drop of liquid dish-washing soap destroys the surface tension and causes the coin to sink. Includes 50 coins and suggested activities. (These coins are nearly impossible to find in the U.S.) 50 coins per package.

YEN-110  50 coins  $7.95

Find lesson ideas and product videos at www.TeacherSource.com
Density

Blob-a-Lamp
At room temperature, the colored wax blobs are denser than the liquid. But turn the lamp on and soon enough, the questions begin: which material really is denser—the liquid or the wax blobs? What makes the blobs rise? Why do they descend back toward the lamp’s base? And what does the incandescent bulb in the lamp’s base have to do with any of this? ≈13” tall. Not recommended for children under 12. Colors may vary.

DEN-455  Blob-a-Lamp  $12.95
DEN-457  Replacement Bulb  $4.95

Air Swimmers
Teach your students the principles of buoyancy, density, and propulsion with these amazingly life-like Air Swimmers. With complete up, down, and 360 degree turning control, Sharks and Clown Fish propel themselves through the air with incredibly smooth, realistic motions. They require only four AAA batteries (not included). Fill your Air Swimmers with helium (easily found at any party store, florist shop, or grocery store that carries balloons). The body is made from a high quality, durable Mylar® material that will stay inflated for weeks! You can fill it again and again. Each fish is 57” long and 36” high.

AIR-444  Air Swimmer Shark  $37.95
AIR-446  Air Swimmer Clown Fish  $37.95

Super Dense Wood
This very rare wood grows in South America. With a density higher than that of water, this unusual wood sinks in water and makes a great density lesson. May contain ironwood, Lignum Vitae, or other super dense woods. ≈130 g.

FE-12  $11.95

Diving Submarine
Remember the submarine toys you used to find in cereal boxes? This little submarine works the same way. Powered by baking powder, it dives and surfaces just like a real submarine. This is a great science toy for discussing buoyancy, density, and the production of CO₂. 11.4 cm (4.5”) long.

SUB-10  $3.95

““This has to be one of the most high interest demos I’ve ever conducted. Teachers and students cannot believe the reasonable price when they ask how much I paid for it.”  
- Bruce, Matthews, NC

www.TeacherSource.com/category/newsletterlibrary

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FE-12  $11.95

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Density

**ZigZag Density Tumbler**
This elegant desk “toy” offers a hypnotizing demonstration of surface tension, density, and insolubility. Turn the clear tumbler over and watch as two different colors of droplets float down in relaxing zigzag patterns. Great as a discussion or inquiry starter. How many liquids does the tumbler contain? What can you infer about the density of each liquid? What causes the difference in the size or speed of the droplets? How does static electricity affect the liquids? It’s a soothing demonstration of potential and kinetic energy in action. 7.6 x 15.3 cm (3” x 6”). Colors may vary.

**DEN-475** $7.95

**Flowing Color Spectrum**
Three different colorful droplets appear to be changing shape as they fall from the top reservoir of liquid to the bottom, when inverted. How many different colored droplets are really present? (Only two.) Can you infer anything about their densities? Why do the drops change shape as they fall? Great for sharpening those observational skills! Colors may vary. 14.5 cm (5.6") tall.

**DEN-445** $6.95

**Colors in Motion**
A colorful way to demonstrate density. This tabletop device has four chambers, each filled with a different colored liquid. Flip it over, and the colors will start to switch places, without mixing! Magic or density? Demonstrates density, color mixing, and insolubility. 13.3 cm (5.25") tall. Colors may vary.

**DEN-425** $7.95

**Sandscape**
When inverted, three different colored sands flow through a clear liquid, starting and stopping as they encounter a hole or a barrier. It is fascinating to watch the eddy currents form by the flowing sand in a moving liquid! If you look carefully, you can even observe the fluid moving upward as everything else seems to be flowing downward. Colors may vary. 14 x 20 cm (5.5” x 8”).

**DEN-440** $12.95

**Geological Flow Demo**
“It’s sedimentary, my dear Watson! Perfect for a discussion of geological formation, this beautiful demo contains varying sizes and shapes of particles, which illustrate how naturally occurring “veins” of rock are formed. Stand included. Colors may vary. 26 cm (=10") round.

**SAND-100** $79.95

See our blog for awesome ways to use it in and out of the classroom!
Density: Cartesian Divers

WORKS GREAT WITH OUR 1-LITER SODA BOTTLES!

FIZZ-KEEPER PUMPS
Described to keep the carbonation in one- and two-liter plastic soda bottles, these pumps are perfect for Cartesian Diver experiments. Simply place your diver in a plastic soda bottle filled with water, screw on a Fizz-Keeper Pump cap and pump away! With the pump, even young children with small hands can easily operate the diver.

CD-4 Fizz Keeper $4.75
11 or more $4.50 each

NEW! BOTTLE BUSHING
Finally! An inexpensive and quick way to attach standard soda bottles to PVC piping for use in many STEAM projects such as bottleponic, hydroponic and aquaponic gardens, dispensers, or whatever the imagination can come up with. Made from food grade PVC and includes a food grade O-ring which forms a seal around the neck of the bottle. Fits into any 1 inch Schedule 40 PVC socket fitting. PVC adhesive required, not included. NOT for pressure applications.

CST-580 $1.25

CATCH AND RELEASE DIVERS
Make a fun Cartesian Diver game! One diver floats and has a hook; the other diver stays on the bottom and has a loop. Explore fun and science as you try to hook the loop! Class set contains enough material to make 30 hook and sinker diver sets. Bottles not included.

CDH-413 Single Diver Set $4.50
CDH-422 Class Set of 30 $21.95

1-LITER SODA BOTTLES FOR EXPERIMENTS
Brand new soda bottles with caps are perfect for making Tornado Tube Bottles (page 34), Cartesian Divers, Bottle Biology experiments, storing aqueous solutions, and more. These bottles are completely clean, so there’s no label to scrape off, and no worries about what had previously been stored in the bottle. Cap colors may vary.

BOT-600 1 Dozen 1-L Bottles & Caps $15.95
BOT-672 72 1-Liter Bottles & Caps $87.95
SM-150 Extra Caps 100 / pkg $9.95

CARTESIAN DIVERSIONS CLASS KIT
Each kit comes with 60 ballast nuts, 60 pipets, one Fizz-Keeper Pump, one sheet of acetate, two feet of coated copper wire, five pipe cleaners, three permanent markers, four feet of fishing line, three sheets of colored craft foam, and two feet of yarn—enough to make 60 divers! Your students will love creatively decorating their divers while learning all about what makes them tick! Includes 42-page instruction booklet. Extra ballast nuts and pipets also available.

CDK-625 Cartesian Diversions Class Kit $32.95
CDK-630 Kit and DVD (CD-900DVD) (See details on our website) $49.95
CD-3 Ballast Nuts $16.50
PP-222A Pipets Bag of 100 $10.95
PP-222B Pipets Box of 500 $26.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Density

**Density Flow Models**

Engage your students with dramatic demonstrations and simulations of many of the Earth's dynamic natural processes. With these kits, students use scientific inquiry techniques to explore concepts related to geology, meteorology, and oceanography. Available in a large classroom demonstration model and a slightly smaller model perfect for student group work in the lab, both Density Flow Models use the flow of brightly colored fluids to help students of many different levels visualize important concepts relating to density such as plate tectonics, weather and fronts, air pressure, wind, ocean currents, thermoclines, and much more.

Density Flow Models come with extensive teacher's guides (over 50 pages!) Each includes complete set-up instructions, student activities, and questions and answers designed to complement Earth science, general science, physical science, and integrated science curricula. Developed by teacher Paul Herder. Please allow at least one week for delivery.

**DFM-100** Large Classroom demonstration model  
Tank: 112 x 15 x 9.5 cm (44" x 6" x 3.75")  
**$434.95**

**DFM-200** Small Student Group demonstration model  
Tank: 56 x 15 x 9.5 cm (22" x 6" x 3.75")  
**$234.95**

**Density Sphere Experiment Kit**

In this kit, students discover and apply the concepts of density and buoyancy by creating a sugar or salt gradient in a plastic column and floating five small spheres in the solution. Each sphere floats at a different level! Includes full instructions and write-ups as well as spheres made of polyethylene, polystyrene, nylon, acrylic, and cellulose acetate. Unknown plastics are also included for student density determination. Great for an elementary science table or as a terrific lab for middle school, high school or college.

**DEN-10** Density Sphere Kit  
**$13.95**

**DEN-105** Class Set of 10  
**$104.95**

**Aerogel**

Aerogel, also known as "Frozen Smoke," a truly space-age material, is one of the least dense materials in existence. Silica aerogel contains particles of 2-5 nm in diameter. It is 99% air, but exhibits extraordinary insulation and structural properties. At one time it held 15 entries in the Guinness Book of Records, and still holds one. You can light a gas torch on one side and it won't get hot enough to light a match sitting on the other side! Some chipping around edges is normal. Classic Silica™ aerogel disc, 27 mm diameter x 7 mm height.

**SM-500**  
**$46.95**

**Density Cubes - Six Metals**

Students identify each metal cube by determining its density. This classic lab is now available with extra large (easy-to-measure) 2.5 cm cubes of six different metals. Each set includes one cube each: aluminum, brass, copper, iron, lead, and zinc.

**DEN-220** Set of six  
**$39.95**

Find lesson ideas and product videos at [www.TeacherSource.com](http://www.TeacherSource.com)
Density

Poly Density Kit
By Polymer Ambassador Lynn Higgins

When this 1-liter bottle is shaken, the blue and white beads mix as expected. However, when allowed to settle, the beads separate: white at the top and blue at the bottom. Then the two separated colored beads slowly come together in the center of the bottle. How often do you see something floating in the middle of a liquid? Great for illustrating so many concepts: solubility, density, miscibility, the salting out effect... Spontaneous order from disorder! Isn’t this a violation of The Second Law?? (Rubbing alcohol not included.)

DEN-460 $19.95

Mixture Separation Challenge

Using only table salt and water, students are asked to develop a method for separating this mixture of four different small plastic beads. Advanced students can continue on to determine the density of each polymer! The materials in this separation lab can be used over and over again. Because only polymer materials are used, cleanup is easy. Complete teacher instructions provided. Includes 230 g (0.5 lb) of mixture, enough for a class of 24 students working in pairs. Beakers not included. Colors may vary.

MIX-100 $22.95

Steel Sphere Density Kit

Great for teaching the skills of observation and deduction! Although these two shiny, metal spheres have about the same mass, one has a diameter of 2.86 cm and the other a diameter of 12.7 cm, making their densities vastly different. Seeing the large one float in water seems unbelievable! Bowl not included.

DEN-350 $29.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Density: Sets

**Classroom Density Assortment**
This 48-piece density set provides four different sized specimens for each of twelve different materials. Each set of four density samples comes in its own tube for easy classroom management. Materials include aluminum, PVC, acrylic, wood, polypropylene, phenolic, polyurethane, and PTFE.

**DEN-952 $116.95**

**NEW! Aluminum Density Samples**
This set of twelve aluminum samples is larger than most others you’ll find on the market, and a much better price! Ranging from 4 to 9.5 cm long with a diameter of 1.6 cm, they are perfect for water displacement and accurate graphing of volume. Comes with a molded plastic storage tray and complete curriculum.

**DEN-103 $31.95**

**Density Mystery Set**
Ask students to determine the density of 15 identical looking plastic specimens of various sizes. Results will vary. When mass vs. volume is plotted for our Density Mystery Set, two lines with different slopes result. This set is comprised of two different plastics which look the same, one with a density of 1.1 and the other with a density of 1.4. At the conclusion of the lesson, the pieces can be dropped into saltwater—half sink and half float. A great lesson in scientific truth and trusting your own calculations!

**DEN-205 $48.95**

**Density Identification Set**
Students try to identify each of 15 different samples by determining their density. Each sample cylinder varies in size (volume) and density, has a diameter of 1.5 cm and varies between 4-7 cm in length. Set includes aluminum, copper, brass, polyurethane, acrylic, plus 10 other samples.

**DEN-215 $58.95**

**Density & Slope Set**
Students can determine the density of two different materials: aluminum and a gray colored plastic. Plot mass vs. volume. Density is the slope of the line. The set contains four different sized samples of each material for a total of eight specimens. Requires a balance and a ruler or graduated cylinder.

**DEN-40 $21.95**

Find lesson ideas and product videos at www.TeacherSource.com
Density: Viscosity

**Check out our video!**

### Soother Ooze Tube

When turned upside down, the tube’s colorful, viscous liquid takes about 10 minutes to slowly flow through a large opening in the sealed plastic container. Great viscosity demo for your science table! Colors may vary. 20 cm (8") tall.

**SS-16**  $14.95

### Speed of the Bubble Tube Set

Perfect for teaching the concepts of precision, accuracy, graphing, slopes, uncertainty, and extrapolation! This set consists of three 22” long transparent plastic tubes containing colored fluids of different viscosities. A bubble in each tube rises at a constant speed depending on the fluid, the angle of the tube, and to some extent, the temperature. Comes with complete instructions.

**BU-100**  Set of three  $39.95  
**BU-105**  Class Set of 15  $149.95

### Viscosity of Oil Tubes Set

By timing the fall of a sphere through different known grades of oil, your students can construct a time vs. viscosity graph. This graph is then used to determine the viscosity of an unknown oil. The five tubes of oil are sealed with two spheres: one steel and the other a polymer with a low density and low coefficient of friction. The instruction manual relates values to SAE Grades of motor oil used in automobiles. This lab stores in a minimum amount of space and requires very little teacher preparation time from year to year.

Great for practice in recording data, graphing, controlling the variables, etc. Includes instruction manual and set of five tubes, ≈29 cm (11.25"). Stopwatch required.

**VIS-10**  Set of five  $38.95

### NEW! Constant Velocity Tubes

Three of the 34” tubes contain colored oil-based liquids of differing viscosities and an air bubble. The fourth tube contains a colorless oil and two spheres of differing materials. A great way to improve graphing skills or explore the concept of “negative” velocity! Requires a meter stick and stopwatch or similar.

**BU-110**  Set of four  $69.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Chemistry

Hoberman Switch Pitch Ball
Toss the ball in the air and watch the colors flip back and forth between two colors. Gently toss one in the air without spin and notice no change. Repeat with increasing energy until a change occurs. A beautiful lesson in activation energy! Point out the activated complex. Show the difference between translational and rotational energy. Use to demonstrate the activation energy needed for a reaction when two particles collide. Relate to the Arrhenius equation: $k = Ae^{-E_a/RT}$. Colors may vary. Lesson plans (included with pair) offer suggestions on teaching chemistry from middle school to graduate p-chem courses.

**HOB-300**  Switch Pitch Ball  $8.95
**HOB-315**  Pair of Switch Pitch Balls  $16.95

Chemistry Bits
Fourteen Super! Wow! Neat® individually packaged chemistry projects perfect for project work, after school programs, and home schooling. Each kit includes several activities and experiments, enough materials for several trials, and a booklet with instructions and concepts. Ages 8+ with adult supervision.

**BIT-100**  $46.95

**Shakhashiri 49 Chemical Demos DVD**
Introduce your students to 49 of the most well-known chemical demonstrations by renowned chemical educator, Bassam Shakhashiri. What could be better? A lesson that works as expected, time after time. No chemical preparation, no clean-up, and no safety concerns!! Demonstrations include Becker’s Multiple Ammonia Fountain; The Mercury (II) Orange Tornado; Diffusion of Poisonous Bromine Vapor; The 72 Mouse Trap Simulation of a Nuclear Chain Reaction; and even our own Ron Perkins’ Red, White, and Blue Reaction! (Includes an Instructor’s Guide with references and sample questions.)

**BZS-800**  $59.95

Organic Fold-a-Matic
Over 1,350 organic compounds can be “created” using this simple foldable card! This device is useful for students of all abilities, from those in first-year practical chemistry to those in advanced placement chemistry. Sold in packages of 30 cards with suggested teacher activities. Just cut and fold! Created by Bob Becker, Kirkwood High School, Kirkwood, MO.

**HS-11**  Set of 30  $11.95
Four or more sets  $10.95 each

Periodic Table Jigsaw Puzzle
Designed by Theodore Gray, the creator of the Elements of the Periodic Table Poster, this beautiful 1,000-piece puzzle is sure to delight puzzle aficionados of all ages. A great way to learn where all the elements are, as you hunt around your table to place them. Glue it and frame it when it’s done, or take it apart and enjoy the challenge again! Completed size 34” x 16”.

**PER-555**  $19.95

Find lesson ideas and product videos at [www.TeacherSource.com](http://www.TeacherSource.com)
Chemistry: Periodic Tables

Heat Sensitive Periodic Tables
Is it endothermic? Exothermic? Or just plain cool? Our periodic tables change color when heat is applied. Made from our Heat Sensitive Paper, these tables are educational and fun! Your students will be amazed!

HEA-300 Pkg of 30 - 8.5" x 11" $17.95
HEA-320 Pkg of 50 - 5.5" x 8.5" $17.95

Periodic Table Playing Cards
This regular double deck of playing cards features one element per card. Included for each element is its name in English, French, and Spanish; its atomic number, mass, melting and boiling points; and relevant usages. Great for discovering facts about the elements! Teachers can use the cards as rewards for good work!

PER-300 Two decks $15.95

Periodic Table Mousepad
Now you can have the periodic table at your fingertips! This full-color mousepad has a rubberized back to keep it in place on your desk, and its glossy coating makes it virtually spill-proof. Made from recycled tires.

PER-325 $5.95

Periodic Table Cups
Teachers and students love these unique cups. On a white background, we’ve printed a boldly-colored version of the periodic table. Great conversation starters for science parties, workshops, and seminars. Use them as a motivational reward for your chemistry students!

PER-1 50 cups $16.95

Chem Time Clock
Our unique timepiece replaces the usual clock numbers with symbols of elements having corresponding atomic numbers. “H” replaces “1,” “He” replaces “2,” etc. The idea for this clock came from Prof. Bassam Shakhashiri at the University of Wisconsin, who asked Ron Perkins to make one in the summer of 1983. It is the perfect addition to a science classroom.

TIM-510 $31.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Chemistry: Molecular Models

Happy Atoms

Happy Atoms is an innovative digital and physical chemistry set that allows students to discover the world of molecules in an intuitive, hands-on way. It’s the perfect tool for a budding young chemist, yet it is advanced enough for older students seeking to visualize complex molecules and reinforce their chemistry studies. With the Introductory Set, students (ages 8+) use a set of 17 atom models—representing six different elements—to build, scan, and identify molecules. These atoms “bond” together using magnets that accurately portray the single bonds, double bonds, and free electrons that make up the molecules of the universe. A free app gives students a wealth of information about the molecules they’ve created.

Also available as a Complete Set (50 atoms) and Educator’s Bundle (250 atoms). All sets includes a periodic table scanning mat, quickstart guide, and 16-page experiment manual. See our website for additional details.

MOD-305 Introductory Set (17 Atoms) $56.95
MOD-300 Complete Set (50 Atoms) $143.95
MOD-310 Educator’s Bundle (250 Atoms) $699.95

Molymod Molecular Model Sets

These simple yet elegant model sets are a great way to demonstrate chemical compounds in three dimensions. These sets also allow students a hands-on approach to molecular geometry, making it easier to visualize the more complex arrangements. The Inorganic/Organic Set comes with 52 atoms, 37 links, and three lone pair electron clouds. The Organic Set comes with 50 atoms and 64 links.

MOD-150 Inorganic/Organic Set $26.95
MOD-172 Organic Set $26.95
MOD-155 Class Set of 12 Organic/Inorganic Sets $311.95
MOD-175 Class Set of 12 Organic Sets $311.95

Find lesson ideas and product videos at www.TeacherSource.com
**Magnetic Water Molecule Kit**

There’s no better way to teach water concepts than with our hands-on Magnetic Water Molecule Kit. Embedded magnets accurately reflect positive and negative charges, allowing your students to feel the various strengths of hydrogen, covalent, and ionic bonds. Using these magnetic water molecules, your students can discover hydrogen bonding, make ice, dissolve salt, evaporate water, explore transpiration, create ethanol, and much more. Use our kit to show the differences between molecular adhesion, cohesion, and capillary action and to demonstrate surface tension, evaporation, condensation, and solubility. Each single kit includes enough pieces for 12 water molecules, plus one each for sodium, chloride, ethane, and hydroxyl groups. Our six-pack kit is perfect for classroom use. All kits come with detailed assembly instructions. Extensive lessons available online.

- **MOD-200** Single Kit $44.95
- **MOD-205** Six Pack $241.95

**Chromatography Paper**

Our chromatography discs allow students to separate most water-soluble inks into their original blended pigments, revealing their hidden identities. Make several dots or lines of different colors in the center of a disc using water-soluble markers. Water from a cup is drawn up to the center of a disc using a paper towel, then absorbed into the filter disc, separating the colors into a beautiful display. See which inks are pure, and which are blended. Test different types of markers to see which separate the best. Test on other pigments such as those found in flowers. Teaches about light, color, and capillary action. Pack of 100 discs available in 9 cm or 11 cm diameters. (Markers and cups not included.) For ages 6+.

- **FIL-309** 9 cm Chromatography Discs (100 Pack) $6.95
- **FIL-311** 11 cm Chromatography Discs (100 Pack) $6.95

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*Call 203-74-TEACH (83224) or email info@TeacherSource.com*
Chemistry: Kits

Magic Crystal Tree
Crystal trees like this have been around for decades. Using capillary action and evaporation, you can watch as the branches of this specially treated paper tree bloom with colorful crystals. You’ll see your first crystals in just minutes, then watch as they continue to grow for hours. Includes one tree form, growing solution, and growing base. Each tree measures 10 cm (4”) tall. Colors may vary.

CRY-200 Magic Crystal Tree $2.95
CRY-205 Class Pack of 10 Trees $24.95

Fascinating Oscillating Reaction Kit
Make a clear solution and watch it change to amber then to blue-purple and back to colorless. Watch as it amazingly repeats the color cycle again and again. (3% hydrogen peroxide is required.)

CK-475 Individual Kit $11.95
CK-480 Classroom Kit $44.95

Presto! Clock Reaction Class Kit
Make two chemical solutions and mix them together. Wait a few seconds, then wow! It will suddenly change colors. This is the famous iodine clock reaction in an easy-to-use kit. Change the concentrations or temperature and change the delay for the color change. Do the clock reaction with Eco-foam. Learn about solutions and rates of reaction (kinetics). Contains starch solution, sodium iodate, sodium sulfite, citric acid, sodium thiosulfate, Eco-foam, spoons, small scoops, cups, rack, and instructions. For ages 9+ with adult supervision. Contains enough for a five station classroom setup that can be repeated approximately three times.

CK-415 $44.95

The Cool Blue Light Experiment Kit
Make a cool blue light appear in the dark. Make a “dirty” penny glow. Learn about how fireflies glow, chemiluminescence, and the real quantum leap. Contains luminol mixture, perborate mixture, copper sulfate crystals, vial, rack, spoon, small scoop, stirrers, cups and instructions. For ages 10+.

CK-150 Individual Kit $10.95
CK-165 Classroom Kit $44.95

Fizz Wizard and Jammin’ Jelly
Learn about chemical solutions, acid/base reactions, indicators, pH, and gels. Class kit contains enough for a five station classroom setup that can be repeated approximately three times.

CK-365 $44.95

Find lesson ideas and product videos at www.TeacherSource.com
Chemistry: pH Indicators

Color-Changing Goldenrod Paper
True goldenrod paper is made from a dye that is an acid/base indicator. This paper turns bright red in bases such as ammonia, baking soda, or washing soda and returns to bright yellow in acids such as vinegar or lemon juice. Make your own indicator paper or use to preserve hand prints. Instructions included. Color-changing goldenrod paper has become very difficult to find. Ours is guaranteed to change colors. Standard US letter size, 8.5” x 11”. 100 sheets.

SM-925 100 sheets $16.95

A classic classroom favorite!

Goldenrod Electrochemistry Kit
Did you know you can make Goldenrod Paper turn red using just salt water and electricity? With this simple, safe, easy-to-use add-on kit, you can use your goldenrod to explore the fascinating world of electrochemistry—just add foil, table salt, and water! (Goldenrod Paper not included).

OHM-380 $3.95

pH Indicator Set
Measure pH, do science magic, and learn about indicators, acids, and bases! Use with Polyvinyl Alcohol (PVA) and borax solutions to make red, white, blue, and purple slime. Phenol Red is commonly used to test pH in spas and swimming pools. Bromthymol Blue is used to make blue, gold, and green. Both are used in elementary science experiments and have many uses in biology. Contains 1 oz phenol red solution, 1 oz bromthymol blue solution, 30 g citric acid, 30 g sodium carbonate, beaker, scoops, cups, sticks, pipets, pH card, MSDS, and instructions. For ages 9+ with adult supervision!

IND-200 $12.95

Red Cabbage Extract
A safe and easy universal acid/base indicator. As the pH of a solution increases, red cabbage juice changes gradually from red to green. By matching the color of the solution to the included chart, the pH of a solution can be determined. This 20 gram bottle of powdered extract is enough to prepare five gallons of indicator solution!

IND-100 $10.95

Patriotic Colors Experiment Kit
Turn three colorless solutions into red, white, and blue. Make the colors disappear and reappear. Do the famous Disappearing Ink tricks, make test papers and more. Learn about the chemistry behind solutions, precipitates, acid/base reactions, and pH. Contains phenolphthalein solution, thymolphthalein solution, sodium carbonate, citric acid, calcium chloride, pipet, stirrers, cups, and instructions. For ages 9+ with adult supervision. Includes enough materials for repeating the experiment two to three times.

CK-250 $12.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Chemistry

Chemical Heat Packs
Click a metal disk and watch the liquid crystallize. Younger students can safely feel the heat of a physical change. Advanced students can determine the heat of fusion of hydrated sodium acetate (fp = 54°C). Great for calorimetry experiments! Bending the metal disk initiates the crystallization of super-cooled sodium acetate and water; boiling in water returns the solid to a liquid. Can be used over and over. Instructions and lesson ideas provided! 10 x 10 cm (4" x 4").

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<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>HEA-400</td>
<td>Chemical Heat Pack</td>
<td>$6.95</td>
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<tr>
<td>HEA-415</td>
<td>Class Set of 12</td>
<td>$74.95</td>
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</tbody>
</table>

Nitinol Memory Wire
This crystalline metal changes phase around 50°C. Bend it, then drop it into hot water and watch it return to its original shape! Set into different shapes by heating with a candle flame. Diameter: 0.75 mm (0.0297"). Available by the foot or in 3-inch samples.

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<tr>
<th>Item</th>
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<tr>
<td>HS-6</td>
<td>Nitinol Memory Wire</td>
<td>$5.25 / foot</td>
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<tr>
<td></td>
<td>Six feet or more</td>
<td>$4.75 / foot</td>
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<tr>
<td>HS-610</td>
<td>10 ft pack</td>
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<tr>
<td>HS-9</td>
<td>3&quot; Nitinol Samples</td>
<td>$6.95 / pkg of 10</td>
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<td></td>
<td>11 or more</td>
<td>$5.95 / pkg of 10</td>
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Heat Pipe Demo
Hold one piece of copper in each hand and immerse the ends into a container of hot water or ice water. It is amazing how quickly heat transfers in the heat pipe and how slowly it transfers in the solid copper. Heat pipes are used in laptop computers and other devices for cooling. They work on the principle of the heat capacity of water and a wick. Explanation included.

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<tr>
<td>HP-100</td>
<td>$39.95</td>
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Nitinol Memory Spring
This spring is made of nitinol, an alloy of nickel and titanium, nitinol (Ni-Ti) falls into a sophisticated class of materials known as shape memory alloys that “remember” their original shape. It can be twisted or straightened but will always return to its original shape when dipped into hot water (=50°C). Comes with a Teacher’s Guide. Wire is 0.75 mm thick, with a 20 mm inner diameter and 45 cm overall length.

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<tr>
<td>HS-620</td>
<td>$13.95</td>
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Fire Syringe Demo
When the plunger in the transparent cylinder is rapidly pushed down over a piece of cotton or paper towel, ignition occurs. This is one of the most impressive demonstrations of the heat produced when a gas is rapidly compressed—the principle of the Diesel engine ignition. ≈22 cm (8.5") tall.

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<th>Item</th>
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<tbody>
<tr>
<td>FIR-150</td>
<td>$17.95</td>
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Comfort Knob for Fire Syringe
This heavy duty spherical knob makes a great replacement part.

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<th>Item</th>
<th>Description</th>
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<tbody>
<tr>
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<td>$4.95</td>
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</table>

A Super Vapor Pressure Demo!

Find lesson ideas and product videos at www.TeacherSource.com
Fabric Identification Kit & Refills

This complete kit allows a class of 15 pairs of students to use dyes to identify unknown pieces of fabric from eight possibilities. The kit consists of instructions, five feet of Multi-Fiber Ribbon, two Multi-Fiber Dye pellets, three packages of powdered drink mix, and enough material to make 60 unknown fabric samples.

SM-615   $43.95

Multi-Fiber Dyes - Refill

Use these dyes along with the Multi-Fiber Ribbon to identify an unknown swatch of fabric. These incredible dyes stain each of the fibers a different color. Each package contains 10 ready-to-use capsules (five each of two different dyes). Simply place a capsule in boiling water and soak the Multi-Fiber Ribbon for five minutes.

SM-605   $16.50

Dissolving Paper

This is real paper, made of sodium carboxyl methyl cellulose. The amazing thing is that it dissolves in water. Dip it in hot or cold water and watch it disappear before your eyes! Can be used in most laser printers and copiers. After it’s printed on, the paper will dissolve, but the letters will remain! Make your own alphabet soup! 21.5 x 28 cm (8.5” x 11”) sheets of paper. Available in packs of 15, 30, or 100 sheets.

SM-515   15 sheets   $7.95
SM-530   30 sheets   $13.95
SM-510   100 sheets  $42.50

Multi-Fiber Ribbon Refill

This ribbon consists of eight different fiber strips woven together into a single ribbon. It can be used to test different commercial dyes such as Rit and Kool-Aid, and natural dyes such as goldenrod and grape juice. Note how each of the fabrics is stained differently. Use to identify a piece of unknown fabric. One yard may be cut into more than 60 test strips!

SM-600   Multi-Fiber Ribbon
  6-49 yards   $7.95 / yard
  50 or more yards   $7.75 / yard

Multi-Fiber Unknowns - Refill

This kit consists of eight different pieces of fabric, each represented in the Multi-Fiber Ribbon. The eight 4” x 12” pieces of cloth can be divided into more than 200 unknown samples of cloth for students to identify using the Multi-Fiber Dyes (SM-605).

SM-610   $24.25

Mole Element Sample Set

Each sample of aluminum, copper, iron, and zinc contains $6.02 \times 10^{23}$ atoms of the metal. Great for chemistry students learning the mole concept and for determining densities and specific heats!

MOL-500   $25.95
Heat Sensitive Pencils

These unique thermochromic pencils let you know that “you’re getting warmer” as you make your point. They actually change color with the heat from your hand! Excellent motivational prizes or a sure-fire way to guarantee your students won’t lose their pencils. 25 pencils in assorted colors.

MO-7 pkg of 25 $11.95

Heat Sensitive Periodic Tables

Is it endothermic? Exothermic? Or just plain cool? Our periodic tables change color when heat is applied. Made from our Heat Sensitive Paper, these tables are educational and fun! Your students will be amazed!

HEA-300 Pkg of 30 - 8.5" x 11" $17.95
HEA-320 Pkg of 50 - 5.5" x 8.5" $17.95

Heat Sensitive Paper

Our thermochromic paper changes color within the temperature range of 31°C (88°F) to 37°C (98°F). As the paper is held in your warm hands, the color will begin to change or disappear. As it cools, it reverts back. The cycle repeats itself indefinitely. This 8.5" x 11", 24 lb. weight paper will accept practically any type of printing: photocopier, laser, ink jet, pen, pencil, etc.

HEA-200 40 sheets $25.95
HEA-250 Ream of 400 sheets $189.95
HEA-285 Sample Pack of eight sheets $5.95
(four glossy, four non-glossy)

Four brilliant colors:
- Purple to Pink
- Green to Yellow
- Blue to White
- Magenta to White

The Ultimate Paper Sample Pack


SM-575 24 sheets $9.95

ColorFlame Candles

Unlike anything you have seen before, these candles burn in COLORS—the actual flames burn in brilliant hues of red, green, blue, orange, & purple! Created using 100% natural, nontoxic ingredients. Set of 12 candles and holders. 5.5 cm (2.25") tall.

SPC-200 Set of 12 $2.95
Chemistry

**Reaction Plate Mixing Wells**
These clear mixing well trays are perfect for color mixing and micro-reactions. Challenge students to make as many colors as they can from red, yellow, and blue colored water. Discover various color reactions of acids and bases using a universal indicator. Ideal for mixing up small amounts of liquids, sprouting small seeds, or storing small items. Trays measure 13 x 9 cm (5" x 3.25") each. Lids are included.

- **LSP-150** 12 Well Reaction Plate $2.50
- **LSP-155** 24 Well Reaction Plate $2.50

**Shrinkles® Plant and Animal Cells**
Students draw and color their own models of plant and animal cells, then watch as the cells magically shrink in an oven (with adult supervision of course). Then they get to take their cells home as keychains or zipper pulls! Comes with instructions, teacher notes, diagrams, and enough materials to make 30 model cells. Use with colored pencils or permanent markers to create your own shrinking designs.

- **BIO-150** $33.95

**Refill Kit**
Includes 50 sheets and 100 loops for keychains or zipper pulls. Kit makes 100 cells.

- **DIN-110** $32.95

**Self-Inflating Balloons**
Squeeze a flat, colored balloon and watch it self-inflate! Challenge students to offer an explanation. Then have them observe the clear, colorless balloon self-inflate. Ask your students to construct their own self-inflating balloon using water and baking powder, or vinegar and baking soda! Four self-inflating Mylar balloons are included: two colored and two colorless. 14.5 cm flat dia. (5.75"). Styles may vary.

- **AS-800** Set of four $6.95

**Thermoplastic Polymer**
This amazingly versatile polymer can be heated and molded over and over again! It falls into a class known as thermoplastics. The melting point for this material is quite low—only 150°F (60°C), so it can be melted in hot water and molded by hand. It can also be cut and extruded. Safe and biodegradable. 250 g.

- **HEA-500** Thermoplastic Polymer $15.95
- **HEA-5RED** Red Polymer Pigment, 3 g $4.95
- **HEA-5YEL** Yellow Polymer Pigment, 3 g $4.95
- **HEA-5BLU** Blue Polymer Pigment, 3 g $4.95
- **HEA-5GRN** Green Polymer Pigment, 3 g $4.95
- **HEA-5BLK** Black Polymer Pigment, 3 g $4.95
- **HEA-525** Polymer Pigment Five Pack $19.95

**Polymer Bead Demo**
This amazing demo starts when one end of a 50' length of beaded chain is pulled over the edge of its container. As the end falls and accelerates, the chain rises higher than the rim and seems suspended in the air. Students see this as a discrepant event. They will ask to see it again and again. This demo is great for explaining self-siphoning polymers and Newton’s First Law. Holding the handle of the large mug (included) enhances the visibility.

- **MER-100** $19.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Chemistry: Slime & Putty

NEW! Shimmer Putty Trio

Our Shimmer Putty Trio is a trifecta of scientific awesomeness! It bounces like a super ball, flows like slime, shears when pulled... and it sparkles! Each plastic jar contains three different colored portions of slippery, shimmery, scented, silicone-based putty. Introduce your students to non-Newtonian substances and let the learning begin! Why is it so cold? What happens if you mix the colors together? Is it a solid or a liquid? Colored layers are separated by plastic caps which can be kept or discarded. Colors may vary.

SL-510 $2.95

Poly-Ox: A Self-Siphoning Gel

This amazing polyethylene oxide polymer displays mind-bending, non-Newtonian properties when dissolved with anhydrous alcohol or acetone (not included). Using only a small amount of polymer, you can create a fluid that will climb a rotating rod, or siphon itself into a lower beaker!

GB-100A $10.95
91 g (≈1/5 lb) enough for 30 demonstrations

GB-100B $44.95
454 g (1 lb)

Use food coloring to make any color Poly-Ox you like!

Melting Snowman

Build a snowman out of white putty and the included plastic accessories; then watch as he melts into a puddle of goo. This silicone-based bouncing putty has properties of a solid as well as a liquid, and it will slowly ooze to take the shape of its container. Luckily, your snowman can be rebuilt without the risk of frostbite! 50 g of putty.

PUT-300 $8.95

Color-Changing Silicone Putty

Containing a heat sensitive dye, these silicone bouncing putties change color with the heat of your hand and from the heat generated by pulling and stretching. Fun classroom prize! 91 g (=1/5 lb).

PUT-150 Twilight (purple to light blue) $10.95
PUT-170 Sunburst (deep orange to yellow) $10.95

UV Sensitive Putty Arctic Flare

After just a few seconds in the sun—or under the black light keychain (included)—this putty’s icy white shimmer is transformed to a vibrant purple. Hold the UV light close to the putty to draw an intense line of color, or move it farther away for a pink glow. Take it outside and watch it react! Then tear it in half to see the unchanged color in the middle. This non-Newtonian substance can be bounced, stretched, pulled, and snapped. Always returns to its original white color and never dries out. Glows orange in the dark. Made in the USA. 91 g (=1/5 lb).

PUT-175 $14.95

Super Ferromagnetic Silicone Putty

This silicone bouncing putty responds to the presence of a magnetic field. Place a blob near or between two strong magnets and watch what happens. Especially good attraction with our neodymium magnets. Includes a magnet (style may vary).

PUT-200 91 g (=1/5 lb) $14.95
Chemistry: Slime

Make Your Own Slime!

Our Slime-Making Kits come with all the materials you need to make 0.5 oz of perfect slime! Each kit comes with the required chemicals in sealed disposable pipets, a mixing container with lid, mixing stick, and complete instructions. The Glowing Slime Kit comes with a capsule of our Glow-in-the-Dark Pigment (page 74). Introduce your students to plastics and polymers in a way they’ll remember forever!

<table>
<thead>
<tr>
<th>SL-1</th>
<th>Slime-Making Kit</th>
<th>$3.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL-2</td>
<td>Glowing Slime-Making Kit</td>
<td>$4.95</td>
</tr>
</tbody>
</table>

Hot Water Soluble Polyvinyl Alcohol Bags

These polyvinyl alcohol bags can be dissolved in hot water to make a polyvinyl alcohol solution. When combined with a borax solution, the polyvinyl alcohol polymer is cross-linked to form a substance more commonly called SLIME! Simply dissolve each bag in about two cups of hot water to make the 4% polyvinyl alcohol solution necessary for slime. Makes about two cups per bag.

<table>
<thead>
<tr>
<th>SM-8A</th>
<th>Pkg of five PVA bags</th>
<th>$7.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM-8B</td>
<td>Pkg of 25 PVA bags</td>
<td>$32.95</td>
</tr>
<tr>
<td>SL-305</td>
<td>Sodium Borate (8 oz)</td>
<td>$2.95</td>
</tr>
</tbody>
</table>

Alginate Worm Kit

Make colorful, worm-like gels by combining two solutions; sodium alginate (from seaweed) and the salt, calcium chloride. The calcium ions from the salt loosely bind the polymer alginate chains into a gel. With the addition of our Red Cabbage Extract (page 49), students can watch the color-changing gel as it forms. The kit includes instructions one liter of sodium alginate solution, calcium chloride salt, cups, forks, droppers, and a plastic tub.

| CK-600 | $19.95 |

Super Cool Slime

We all know that slime is cool, but this slime is REALLY cool—literally! You’ll marvel at how chilly this stuff is. Each flask contains colorful, shimmery goo that breaks when you pull it apart, but also flows like a liquid. Ask students, why does it feel so cold? Is it a solid or a liquid? An awesome discrepant event demo that you can relate to many topics: heat energy, non-Newtonian fluids, polymers, and much more. Comes in assorted colors.

| SL-500 | $3.95 |

Classroom Slime Kit

Slime is an easy and fun way to teach about polymers and cross linking. The Classroom Slime Kit contains one liter of colorless, 4% polyvinyl alcohol—initially clear, but it can easily be colored using food dyes—and enough sodium tetraborate solution to cross-link with it. A preservative has been added to avoid the growth of unwanted creatures. If pulled slowly, it flows. If pulled quickly, it snaps. If rolled into a ball, it bounces! Makes more than 60 portions (0.5 oz each). The Super Slime Mega Kit also includes 32 mixing cups with storage lids, 32 measuring cups, two measuring beakers, 32 stirring sticks, instructions, and an activity guide.

<table>
<thead>
<tr>
<th>SL-300</th>
<th>Classroom Slime Kit</th>
<th>$16.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL-800</td>
<td>NEW! Super Green Slime Kit</td>
<td>$16.95</td>
</tr>
<tr>
<td>SL-820</td>
<td>NEW! Super Slime Mega Kit - 64 oz!</td>
<td>$36.95</td>
</tr>
</tbody>
</table>

Use food coloring to make any color slime you like!
**Chemistry: Gro-Beasts**

**Our Famous Gro-Beast Alligators!**

These Gro-Beast reptiles start at about 4” long and grow to almost a foot long when placed in water! Great for a class measuring or graphing project. Makes a super demonstration! Growth is visible within 24 hours, full size in about a week. (See our 1-Liter Soda Bottles on page 39.) Color and style may vary.

- GB-202 Pkg of two $3.95
- GB-210 Pkg of 10 $12.95
- GB-220 Pkg of 20 $23.85

**Zack’s Alligator**

by Shirley Mozelle

Have your students make the connection between literature, science, and math with our Gro-Beast children's book, *Zack’s Alligator*. In this beautifully illustrated book, all the fun begins for Zack (and your students!) when a small package arrives in the mail. Contained within is a small alligator keychain and a note from Zack’s uncle. Following his uncle’s instructions, Zack places his keychain in the sink and WOW! a huge, fun-loving alligator emerges! Have your class chart the growth of their own growing alligator. Paperback, 63 pages.

- BK-200 Book only $3.95
- BK-205 Book with two Alligators $6.95

**Growing Frogs**

This bright green critter starts out 4 cm (1.5”) long but swells up to more than twice its size when placed in water for 8-10 hours. A wonderful tool for investigating concepts like mass, volume, surface area, absorption of different concentrates, and more. Perfect for even the youngest scientists. Use distilled water for best results. As in nature, not all of our frogs are perfect—a few may have subtle abnormalities. Enjoy the diversity of nature.

- GB-25 30 Growing Frogs $9.95

**Large Gro-Beast Dinosaurs 6-Pack**

When dry, these six little dinosaurs will all fit easily in the palm of your hand...but when placed in water, they'll absorb many times their own weight in water. Made of a superabsorbent polymer, our green Gro-Beast Dinosaurs start at about 1” long and grow to over 4” each! Each package contains six different types of dinosaur. A wonderful way to work on variables, measurements, mass, volume, and more. Dinosaurs will shrink back to their original size as they dehydrate. We recommend using distilled water for best results, but why not try submerging a few in other liquids to see how their growth changes?

- GB-106 Six Large Gro-Beast Dinosaurs $6.95

**Kid Favorite!**

**www.TeacherSource.com/category/newsletterlibrary**
Chemistry: Polymers

Super Bouncing Ball Kit
Super balls are plenty of fun to bounce, and even more fun to make! The kit can be used to reinforce students’ mastery of lab procedures, as an unforgettable introduction to polymers, or even as an energy lab (measuring bounce heights). Comes with 12 sturdy plastic molds and enough colorful crystals to make 24 bouncy balls. You provide the water and in just a few minutes, your students will be able to use their creations to conduct a wide range of investigations. This is hands-on science at its best!

Refill kits are sold separately, and contain enough polymer crystals to make 12 more super bouncing balls. (No additional molds.)

<table>
<thead>
<tr>
<th>Item #</th>
<th>Style</th>
<th>Trails Kit</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>BALL-115</td>
<td>Bouncing Ball Refills</td>
<td>$7.75</td>
<td></td>
</tr>
</tbody>
</table>

Water Gel Crystals, Cubes & Spikes
Clear, colorless, super-absorbent polyacrylamide can absorb many hundreds of times its own weight when placed in water and becomes virtually invisible because it has the same index of refraction as water. For different effects, it can easily be dyed with ordinary food coloring. Crystals are great for sprouting seeds. Cubes start at about 6 mm (0.25”), end at about 3 cm (1.25”), 50 grams (~290 cubes). Spikes are 1” long, 0.25” thick, and are reusable (10 spikes per package).

<table>
<thead>
<tr>
<th>Item #</th>
<th>Style</th>
<th>Grams</th>
<th># Spheres</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>GB-5B</td>
<td>Crystals</td>
<td>113 g (¼ lb)</td>
<td>$6.95</td>
<td></td>
</tr>
<tr>
<td>GB-5C</td>
<td>Crystals</td>
<td>454 g (1 lb)</td>
<td>$14.95</td>
<td></td>
</tr>
<tr>
<td>GB-740</td>
<td>Cubes</td>
<td>50 g</td>
<td>$6.95</td>
<td></td>
</tr>
<tr>
<td>GB-3</td>
<td>10 Spikes</td>
<td></td>
<td>$3.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11-29 pkgs of 10</td>
<td></td>
<td>$3.25 each</td>
<td></td>
</tr>
<tr>
<td></td>
<td>30 or more pkgs of 10</td>
<td></td>
<td>$3.00 each</td>
<td></td>
</tr>
</tbody>
</table>

Growing Spheres
Place these hard crystals in water and they expand about 300 times, producing gel-like spheres. Students love to feel the slippery, spherical gel! The Regular size starts with a diameter of about 2 mm and ends with a diameter of about 14 mm. Ask students to determine the change in volume, using \( V = \frac{4}{3}\pi r^3 \). Great for starting seeds and growing plants so that the roots can be seen! Can be tinted using food coloring. The hydrophilic polymer is similar to our super-absorbent Water Gel Spikes and can be dried and reused.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Style</th>
<th>Expanded Size</th>
<th>Grams</th>
<th># Spheres</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>GB-702</td>
<td>Small</td>
<td>≈1 cm (0.4”)</td>
<td>50</td>
<td>≈3000</td>
<td>$6.95</td>
</tr>
<tr>
<td>GB-710</td>
<td>Regular</td>
<td>≈1.4 cm (0.55”)</td>
<td>50</td>
<td>≈2500</td>
<td>$6.95</td>
</tr>
<tr>
<td>GB-730</td>
<td>Jumbo</td>
<td>≈3.3 cm (1.3”)</td>
<td>50</td>
<td>≈870</td>
<td>$6.95</td>
</tr>
</tbody>
</table>

Growing Spheres can be dyed by putting food coloring in the water before they are hydrated or made UV-sensitive with our Glow-Bright Concentrate (page 74).
Add water to this granular white powder and watch it instantly expand to 40 times its original volume. The result is a fluffy artificial snow that feels as cool as it looks! Our snow won’t “melt” but it can be dehydrated and re-used. Great for teaching endothermic and exothermic reactions or as part of a polymer lab. This is a great demonstration of interest to students and educators of ALL ages and abilities.

GB-300 100 g (1/5 lb) Makes two gallons of snow    $6.95
GB-315 454 g (1 lb) Makes eight gallons of snow  $19.95
GB-320 2270 g (5 lb) Makes 40 gallons of snow  $85.95

This fine white powder instantly turns water into a slushy solid substance. Technically speaking, the polymer absorbs from 500-1,000 times its own weight in water. Simply add table salt to reverse the reaction. Safe and amazing—your students will love it!

GB-6A 113 g (¼ lb)  $7.95
GB-6B 454 g (1 lb)  $19.95
GB-620 2270 g (5 lb)  $89.95

Find lesson ideas and product videos at www.TeacherSource.com
Fluorescent Magic Sand

Magic Sand is regular sand that has been dyed and coated with a hydrophobic material—a substance that repels water. The coating on the outside of the Magic Sand repels water and keeps the sand dry! Simply remove the sand from the water with a spoon... it is perfectly dry! Available in three fluorescent colors. 1 lb.

<table>
<thead>
<tr>
<th>Color</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS-2BLU</td>
<td>Blue Magic Sand</td>
<td>$5.95</td>
</tr>
<tr>
<td>MS-3GRN</td>
<td>Green Magic Sand</td>
<td>$5.95</td>
</tr>
<tr>
<td>MS-2PNK</td>
<td>Pink Magic Sand</td>
<td>$5.95</td>
</tr>
</tbody>
</table>

Kinetic Sand

Kinetic Sand is an easy-to-shape sand that breathes motion and can be molded into countless designs. A great way for your students to explore variables and a perfect addition to any classroom for group play. Based on 98% clean sand, conforms to the US and EU market safety directives. For ages 3+. 1 kg (2.2 lb).

SAND-200 $14.95

Fortune Fish

Actually a very thin piece of red cellophane in the shape of a 3.5” long fish, this amazing innovation twists and curls when placed in the palm of your hand, but why? An old favorite of science demonstrators.

<table>
<thead>
<tr>
<th>Code</th>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS-40F</td>
<td>72 Fish</td>
<td>$6.95</td>
</tr>
<tr>
<td>SS-40B</td>
<td>144 Fish</td>
<td>$12.95</td>
</tr>
</tbody>
</table>
NEW! Crazy Circuits

Crazy Circuits are a creative, budget-friendly way to teach electronics and much more. These Lego®-based modular electronics kits make learning about electronic circuitry as easy as building with plastic blocks! Can’t solder? No problem! All Crazy Circuit materials are designed to work with any conductive material and can be sewn, snapped, or stuck to many different surfaces. They work perfectly with conductive tapes for paper crafts, conductive threads for e-textile sewing, conductive inks and paints for artwork, or even plain old alligator clips or paper clips. Whether you’re looking for MakerSpace materials, open-ended STEM tools, or just something fun to do, Crazy Circuits brings it all together. See our website for more details.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>OHM-500</td>
<td>Starter Pack (22 pieces)</td>
<td>$49.95</td>
</tr>
<tr>
<td>OHM-505</td>
<td>Deluxe Kit (47 pieces)</td>
<td>$199.95</td>
</tr>
<tr>
<td>OHM-510</td>
<td>Makerspace Kit (228 pieces)</td>
<td>$999.95</td>
</tr>
<tr>
<td>OHM-515</td>
<td>¼ inch Nylon Conductive Tape (5 meters)</td>
<td>$9.95</td>
</tr>
</tbody>
</table>

LightUp Kits

These innovative kits allow kids to build their own real-world projects and wirelessly program them from a tablet. As they experiment, they’re not only learning about science and engineering, they’re also building confidence in their problem-solving abilities. Drag-and-drop code blocks and guided tutorials make it easy for young engineers and innovators to design exciting projects. Detailed instructions and sample ideas available online.

It’s a simple, three-step process. **Build:** snap together magnetic blocks to build your circuit. **Learn:** use the app to review your circuit and adjust any mistakes until the electricity flows. **Code:** connect your circuit with a tablet and program it to do anything you can imagine!

**Edison Kit:** Create a light sensor, buzzer, Morse code beeper, and more. Includes rechargeable battery, red LED, buzzer, light sensor, momentary switch, 50K variable resistor, six wire blocks, and micro USB cable.

**Tesla Kit:** Build a burglar alarm, a jukebox, a sunrise-triggered alarm, and more. Includes rechargeable battery, microcontroller, buzzer, light sensor, momentary switch, 5K resistor, seven wire blocks, and micro USB cable.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Kit Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>OHM-400</td>
<td>Edison LightUp Kit</td>
<td>$49.95</td>
</tr>
<tr>
<td>OHM-405</td>
<td>Tesla LightUp Kit</td>
<td>$99.95</td>
</tr>
</tbody>
</table>
**NEW! Squishy Circuits**

Squishy Circuits Kits use conductive and insulating dough to teach the basics of electrical circuits, engineering, and much more. Includes projects and recipes that inspire creativity, independent thinking, and problem solving. A perfect blend of play and learning!

The **Lite Kit** contains pre-made conductive dough, 15 LEDs, and a battery holder, so you can make a simple light-up circuit. The **Standard Kit** has a Piezoelectric buzzer, 25 LEDs, plus conductive and insulating dough. The **Deluxe Kit** is our most complete kit, with 55 different components (buzzer, motor, battery holder, switch, LEDs, and eight packs of dough). For groups of 10-30, we suggest the **Group Kit**, which does not come with dough. You can make your own conductive and insulating dough or purchase extras! See our website for more details.

<table>
<thead>
<tr>
<th>Kit Code</th>
<th>Kit Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>OHM-165</td>
<td>Squishy Circuits Lite</td>
<td>$14.95</td>
</tr>
<tr>
<td>OHM-170</td>
<td>Squishy Circuits Standard</td>
<td>$34.95</td>
</tr>
<tr>
<td>OHM-175</td>
<td>Squishy Circuits Deluxe</td>
<td>$74.95</td>
</tr>
<tr>
<td>OHM-180</td>
<td>Squishy Circuits Dough Kit (eight 7 oz jars)</td>
<td>$19.95</td>
</tr>
<tr>
<td>OHM-185</td>
<td>Squishy Circuits Insulating Dough (7 oz)</td>
<td>$7.50</td>
</tr>
<tr>
<td>OHM-190</td>
<td>Squishy Circuits Group Kit</td>
<td>$274.95</td>
</tr>
</tbody>
</table>

**SAM Labs Kits**

SAM is a smart construction kit with no wires, no fuss—just serious fun and learning! Your students use SAM blocks to create awesome inventions. Each SAM block has a specific skill. There are buttons, lights, sensors, motors, and so much more. The blocks are wirelessly activated (using Bluetooth) to move, illuminate, or make sounds. One block, a million possibilities. Students can program patterns and behaviors using the intuitive SAM Space app, or build race cars right out of the box with the Curious Cars app. Or use SAM Blockly, available now on Chromebooks and Mac OSX computers via the Chrome browser. Simple ingenuity!

Each kit has a different number of blocks and other pieces to accommodate different numbers of students and project scopes. See our website for full details.

<table>
<thead>
<tr>
<th>Kit Code</th>
<th>Kit Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAM-100</td>
<td>Inventor Kit (8 pieces)</td>
<td>$138.95</td>
</tr>
<tr>
<td>SAM-105</td>
<td>Curious Cars (21 pieces)</td>
<td>$198.95</td>
</tr>
<tr>
<td>SAM-110</td>
<td>STEAM Kit (53 pieces)</td>
<td>$498.95</td>
</tr>
<tr>
<td>SAM-115</td>
<td><strong>NEW!</strong> Classroom Kit (168 pieces)</td>
<td>$998.95</td>
</tr>
<tr>
<td>SAM-120</td>
<td><strong>NEW!</strong> Team Kit (52 pieces)</td>
<td>$398.95</td>
</tr>
<tr>
<td>SAM-125</td>
<td><strong>NEW!</strong> Classroom + STEAM Bundle</td>
<td>$1,497.95</td>
</tr>
</tbody>
</table>

Call 203-74-TEACH (83224) or email info@TeacherSource.com
E-Blox® are not your ordinary building blocks. They can be used to build your creations AND bring them to life! E-Blox® use patented technology, which consists of tin-plated blocks (pARTS™ set) or copper pins and sockets (Circuit Builder™ set) that connect to a battery block, powering the electrical component blocks. The plated blocks used in our pARTS™ set allow you to seamlessly integrate electronic circuitry into your builds to illuminate them with no wires to bundle or hide. The voltage across these plated blocks is very low, so there is virtually no risk of electrical shock when you touch them. And our Circuit Builder™ set includes parts that enable interworking with our pARTS™ set so you can also add motors, speakers, and amplifiers to your builds to create sound effects and launch fans. The City follows the adventures of Seymour E. Blox and his organic submarine, Mimi, as they travel to an ancient city faster than the speed of sound under water. See our website for more details.

NEW! E-Blox® Kits

<table>
<thead>
<tr>
<th>Product</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST-200 E-Blox Circuit Builder 59</td>
<td>$19.95</td>
</tr>
<tr>
<td>CST-205 E-Blox pARTS Plus Set</td>
<td>$44.95</td>
</tr>
</tbody>
</table>

NEW! Backyard Brains Kits - Neuroscience for Everyone!

New! Backyard Brains Replacement Electrodes

<table>
<thead>
<tr>
<th>Product</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-510 Backyard Brains Replacement Electrodes</td>
<td>$7.95 each</td>
</tr>
</tbody>
</table>

**Muscle SpikerBox**

Electricity courses through your muscles with every step you take, every turn of your head, and every time you pick up a pencil, electricity courses through the muscles involved. Electricity acts as a signal telling your muscles to move and it's also produced by those muscles when your brain tells them to contract. Before now, seeing or listening to your bioelectricity was a costly and complex process. But now, with the Muscle SpikerBox, you can easily begin to listen to and record your own (or your friends') muscle action potentials, and display them live on your smartphone, tablet, or laptop.

BIO-500 $149.95

**The Claw Bundle**

Experience the future of robotics with The Claw, a motorized gripper that lets YOU be the innovator of human interfaces! Paired with a pre-loaded Arduino microcontroller, the Claw responds to the EMG signals of your muscles. Make a grip with your fist, and the Claw's appendages closes. Relax and the claw relaxes!

BIO-505 $189.95

**Human-Human Interface**

Have you ever dreamed of controlling the people around you? With the Human-Human Interface, that power is yours! Thanks to the cutting edge of neuroscience and biotechnology, you will learn exciting neuroscience concepts first-hand as your brain sends an electrical impulse to your arm's muscles, telling them to move. When your muscles move, this generates an even larger electrical signal. You'll take that electricity, amplify it further and then inject it into the nerves controlling another person's arm.

BIO-510 $259.95

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Find lesson ideas and product videos at www.TeacherSource.com
NEW!

Dodeca 12-in-1 Solar-Hydraulic Kit

This unique kit will teach your students how to engineer 12 different robots that use both solar and hydraulic power in harmony. Students will actively learn about two key types of alternative energy while they use their imaginations to create four different vehicles (Dune Buggy, Obstacle Avoiding Rover, Excavator, and Forklift) and eight different animals (Elephant, Pterosaurs, Monkey, Ostrich, T-Rex, Crocodile, Scorpion, and Dog-Walker). Building these 12 exciting robots encourages manual dexterity, problem solving, and self-confidence. Kit includes instructions, 231 pieces. No batteries required! For ages 8+. Robot sizes range from Obstacle Avoiding Rover: 4.37" x 3.66" x 4.25" to Pterosaurs: 8.97" x 9.01" x 10.15"

ROB-590 $33.95

NEW!

Kiko.893 Robot

Budding engineers will love Kiko.893—an infrared-sensor-detecting, obstacle-exploring robot. Students first need to build this 107-piece snap-together robot before letting Kiko.893 loose to roam. This adorable little guy has two pre-programmed modes (Follow-Me and Explore) and plenty of sound and light effects. Kiko.893 scans its surroundings by using AI (artificial intelligence), I/R (infrared sensor), and six legs which allow it to turn 360 degrees and seamlessly avoid obstacles. Create a maze or just let Kiko.893 follow you around! For ages 8+. Requires 4 AAA batteries (not included). Dimensions of assembled product: 4.96" x 5.43" x 6.49"

ROB-585 $43.95

14-in-1 Educational Solar Robot

Use solar powered technology to mix and match parts to make 14 unique solar robots. Engineer moving, rolling, and swimming robots. Robots can be used on both land and water. Make a companion dog-bot, a crawling turtle-bot, a scurrying beetle-bot, a wheel bot, boat bot, and more! Extremely detailed instructions with 190 mix-and-match parts. For ages 8+. Parental assistance might be needed depending on skill level.

ROB-575 $35.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
**Wooden Car Kit**

This wooden car is powered by an elastic band. When the potential energy of the stretched elastic is converted into kinetic energy of motion, the car will travel about three meters (≈10 feet). Students can experiment by varying the method of winding the elastic, the number of turns, and the type of surface used. Easy to assemble.

Test your wooden car with yet another variable! The washers enable your students to tackle "weightier" experiments. Pack of eight.

Alternately, provide your students with four wheels and ask them to construct a wooden car using scrap wood.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>WK-1</td>
<td>Wooden Car Kit</td>
<td>$8.95</td>
</tr>
<tr>
<td></td>
<td>Six or more kits</td>
<td>$8.25 each</td>
</tr>
<tr>
<td>WK-105</td>
<td>Eight Washers</td>
<td>$1.95</td>
</tr>
<tr>
<td>WK-2</td>
<td>12 Wheels (2&quot; dia., 0.75&quot; thick, 0.375&quot; hole)</td>
<td>$7.95</td>
</tr>
<tr>
<td>WK-3</td>
<td>12 Wheels (1.25&quot; dia., 0.5&quot; thick, 0.25&quot; hole)</td>
<td>$5.95</td>
</tr>
</tbody>
</table>

**Snap Circuits**

Snap together electronic blocks to build different electronic circuits. These kits include instructions for projects ranging from flying saucers to sound-activated switches and alarms that play music. No soldering! No wire twisting! Uses two AA batteries (not included). For ages 8+. See page 108 for more details.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>OHM-125</td>
<td>Snap Circuits (300 experiments)</td>
<td>$61.95</td>
</tr>
<tr>
<td>OHM-130</td>
<td>Snap Circuits, Jr. (100 experiments)</td>
<td>$29.95</td>
</tr>
</tbody>
</table>

**Transparent Alternator Kit**

How is power made? The Transparent Alternator Kit (TAK) gives your students a chance to discover the answer to this question in an unforgettable way. In less than 20 minutes, students can create a simple device that will not only allow them to produce the energy to light up an LED... but help them understand how it happens. What a marvelous introduction to mankind’s greatest discovery, electricity! This simple device truly demonstrates the foundation of all technology. The discoveries continue as students explore what they can power with their copper wire and magnet alternator. With modifications, they’ll produce enough electricity to charge a cell phone! The alternator can be unwound, disassembled, and rebuilt over and over again.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>OHM-150</td>
<td>Transparent Alternator Kit</td>
<td>$19.95</td>
</tr>
<tr>
<td>OHM-155</td>
<td>Replacement Wire Coil</td>
<td>$6.00</td>
</tr>
<tr>
<td>OHM-160</td>
<td>Class Set of 10 Kits</td>
<td>$179.95</td>
</tr>
</tbody>
</table>

**Solar Rover**

Build and customize your battery-free Solar Rover, place it in the sun and watch it zip along! The reflectors and solar panel turn sunlight into the energy that runs the motor. Can be built with or without a soda can body. For ages 8+.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRN-415</td>
<td>Solar Rover</td>
<td>$16.95</td>
</tr>
</tbody>
</table>

**Project 58: Using parts as conductors**

**Water Alarm:** Test different liquids to see what tone they produce.

**Solar Rover:** Build and customize your battery-free Solar Rover, place it in the sun and watch it zip along! The reflectors and solar panel turn sunlight into the energy that runs the motor. Can be built with or without a soda can body. For ages 8+.
**Rocket Film Canisters**

These canisters are perfect for building your Alka-Seltzer rockets! The tight fitting lid allows the pressure to increase enough for the rocket to fly several feet into the air. Great activity for changing the variables; amount of tablet, amount of water, with or without a nose cone, with or without fins, the way the paper rocket is rolled, etc. Online lessons include complete instructions for building film canister rockets. Also great for geocaching!

| CAN-300  | Pkg of 12 | $7.95  |
| CAN-330  | Pkg of 30 | $15.95 |
| CAN-310  | Pkg of 100| $44.95 |

See our website for a blog about how to make a film canister into a small leyden jar to store electricity: blog.teachersource.com

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**Also made with our canisters:**

- Hovercraft Class Kit [page 31](#)
- Piezo Popper Kit [page 96](#)

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**Mighty Seltzer Rocket**

Five, four, three, two, one, LIFT OFF! This cleverly designed rocket with nose cone and fins will travel 20 to 30 feet into the air. Simply pour in water, drop in a seltzer tablet, replace the end cap, and the rocket is prepared for launch. To activate, invert the rocket, place it on a flat surface and move away. The rocket is 12.5 cm (5”) long. Adult supervision and eye protection recommended. Not for indoor use. Four seltzer tablets included. Teacher Pack includes five Mighty Seltzer Rockets and 10 seltzer tablets. Colors may vary.

| RKT-555  | Mighty Seltzer Rocket | $6.95  |
| RKT-557  | Teacher Pack of five   | $25.95 |
| RKT-560  | 36 Seltzer Tablets     | $7.95  |

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**Reaction Rocket**

Appearances can be deceiving. This rubber ball launcher and plastic rocket may look simple, but they’re a sure-fire way to provoke a WOW reaction—and introduce students to Newton’s Laws. Hold the top of the launcher and drop it straight down onto a hard surface. The rocket shoots up dramatically higher than its original drop height. Explaining energy conversion was never this easy...or this much fun! Comes with one launcher, two rockets. Class Kit includes 15 launchers and 30 rockets. Colors may vary.

| RKT-625  | Reaction Rocket       | $2.95  |
| RKT-630  | Class Kit of 30 Rockets | $39.95 |

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*Call 203-74-TEACH (83224) or email info@TeacherSource.com*
Seo our website for complete details on these exciting kits!

5eBoard Kits

5eBoard™, often referred to as “LEGO for electronics projects,” is a new platform for STEM education, DIY projects, and product prototyping. The new system uses LEGO-like building blocks to construct electronic projects. No soldering is involved and all components can be repeatedly used for either different user groups or projects. The simplicity and flexibility of 5eBoard™ make it suitable to the users at all levels, including K-16 students and professionals. 5eBoard™ education kits are specially designed to reflect the 5E instructional model of teaching and learning. Unlike other products, 5eBoard™ education kits use real-world components in all levels. Therefore, the knowledge gained in the beginner level can be extended to college and beyond. See our website for details on all of our 5eBoard kits.

OHM-450 Level 1: The Fundamental Concepts of Electricity and Electronics $39.95
OHM-455 Level 2: Basic DC Circuits and Electrical Measurements $58.95
OHM-465 How to Build a Stereo Amplifier $39.95
OHM-470 Mastering Arduino Hardware and Software for Students $59.95

The Wall Coaster

Just find a wall and let your imagination soar and your marbles drop! The Wall Coaster uses the basic laws of physics and gravity to enable hours of fun and imaginative play. Comes with eight marbles and more than 16 feet of track and tubes! Super easy to use. For ages 5+.

Simply remove the track and tubes from the package, affix two small pieces of coaster tack (similar to standard reusable poster putty) to the back of the desired pieces, and press onto the wall. By trial and error you will learn which configurations work and which don’t—this is part of the fun! So many variations, you can almost lose your marbles! Colors may vary. See page 88 for more kits and accessories!

MAR-600 The Wall Coaster $21.95

MudWatt

Electricity from Mud

Although we cannot see them with the naked eye, micro-organisms are all around us. One particular species of microbes possesses the unique ability to release electrons outside their bodies as part of their natural respiration. Each of our MudWatt kits utilizes this remarkable ability by providing mud-based microbes with two conductive graphite discs—the anode and cathode. The anode is placed within the mud where the electrogenic microbes grow, and the cathode is placed on top, exposing it to oxygen in the air. You’ll know your bacteria is generating power when you see the LED light blinking. Free lessons and interactive MudWatt Explorer app available online.

OHM-255 Classic Kit 1 vessel, 1 anode, 1 cathode, 1 hacker pack & more $39.95
OHM-265 Science Fair Pack 3 vessels, 3 anodes, 3 cathodes, 3 blinker boards, 1 hacker pack & more $79.95
OHM-270 Classroom Pack 10 vessels, 10 anodes, 10 cathodes, 10 blinker boards, 3 hacker packs & more $299.95

Find lesson ideas and product videos at www.TeacherSource.com
ScooterBots

With colorful chenille stems, wiggly eyes, and a toothbrush head body, our ScooterBots are as adorable as they are educational. What makes them go? A battery-powered pulsating motor causes the individual bristles (or legs) to vibrate and shimmy, sending the bot scooting across any flat surface. Dozens of variables are possible. What happens if you trim or bend the bristles? Connect several bots together? Add stabilizing wire legs? A memorable way to teach principles of engineering and electric circuitry. Kit contains all you need to create these mini-marvels, including instructions.

ROB-210 ScooterBot 10 Pack $29.95
ROB-225 ScooterBot 25 Pack $65.95
BAT-55 Repl. Batteries pkg of 10 $5.95

Articulating Stomp Rocket System

Your students will have a blast building their own Stomp Rockets and launching them outside for hands-on experiments related to Newton’s laws, energy transfer, aerodynamics, and more variables than we can name! Our Stomp Rocket launch pad is built from durable components that will provide years of service. Includes 11 distance marker flags, a protractor, and directions for downloading step-by-step assembly instructions, a rocket template, teaching lessons, and student printables. Can be modified for use in K-12 classes. Soda bottle not included.

RKT-210 $25.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
DazzLinks Sets

DazzLinks is an open-ended building kit designed to inspire creative mechanical projects. Try connecting in different ways. Make our projects or create your own. Create creatures, windmills, vehicles, or whatever your mind can come up with. The **Inventor Sets** have 46 pieces and 75 brad fasteners. The **Classroom Packs** have 230 pieces and 400 brads. All sets include instruction sheets. Available in sturdy cardboard or plastic.

<table>
<thead>
<tr>
<th>Set</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST-450</td>
<td>Inventor Cardboard Set</td>
<td>$24.95</td>
</tr>
<tr>
<td>CST-455</td>
<td>Inventor Plastic Set</td>
<td>$29.95</td>
</tr>
<tr>
<td>CST-470</td>
<td>100 Extra Brad Fasteners</td>
<td>$2.95</td>
</tr>
<tr>
<td>CST-460</td>
<td>Cardboard Classroom Pack</td>
<td>$124.95</td>
</tr>
<tr>
<td>CST-465</td>
<td>Plastic Classroom Pack</td>
<td>$159.95</td>
</tr>
<tr>
<td>CST-470</td>
<td></td>
<td>$2.95</td>
</tr>
</tbody>
</table>

Lux Blox Sets

Lux Blox Sets have generous assortments of parts designed for students to explore STEAM concepts across the curriculum! Get ready to have in-class team design challenges, explore machines, biological structures, chemical structures, mathematical concepts, computer science projects, and test out their engineering ideas. The kits include Teacher’s Primers and laminated starter guides and come in durable plastic storage units.

<table>
<thead>
<tr>
<th>Set</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST-600</td>
<td>Bright Classroom Set (1,340 pieces)</td>
<td>$318.95</td>
</tr>
<tr>
<td>CST-605</td>
<td>Neutral Classroom Set (1,340 pieces)</td>
<td>$318.95</td>
</tr>
<tr>
<td>CST-610</td>
<td>Bright Small Group Set (720 pieces)</td>
<td>$218.95</td>
</tr>
<tr>
<td>CST-615</td>
<td>Neutral Small Group Set (720 pieces)</td>
<td>$218.95</td>
</tr>
<tr>
<td>CST-620</td>
<td>Primary Introductory Set (460 pieces)</td>
<td>$168.95</td>
</tr>
</tbody>
</table>
Brackitz is an award-winning STEM building set that enables you to design and construct any 3D structure you can imagine. Unique "connect-anywhere" pieces easily attach to traditional planks at any angle, allowing builders of all ages to craft everything from small-scale creations to gravity-defying 3D structures with moving parts. Your only limit is your imagination! Perfect for developing creativity and problem-solving skills. Durable, colorful plastic components are made in the USA. See our website for full details on all of these amazing kits.

**Brackitz Sets**

<table>
<thead>
<tr>
<th>Set Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST-300 Driver 43 Piece Set</td>
<td>$24.95</td>
</tr>
<tr>
<td>CST-305 Driver Parts Expansion Set</td>
<td>$9.95</td>
</tr>
<tr>
<td>CST-310 Inventor 44 Piece Set</td>
<td>$29.95</td>
</tr>
<tr>
<td>CST-315 Inventor 100 Piece Set</td>
<td>$59.95</td>
</tr>
<tr>
<td>CST-320 Educational Structures</td>
<td>$199.95</td>
</tr>
<tr>
<td>CST-325 New! Wheels &amp; Axles*</td>
<td>$149.95</td>
</tr>
<tr>
<td>CST-330 New! Pulleys &amp; Cranks*</td>
<td>$149.95</td>
</tr>
<tr>
<td>CST-335 New! Gears, Sprockets, &amp; Chains*</td>
<td>$149.95</td>
</tr>
<tr>
<td>CST-345 New! STEAM Center</td>
<td>$585.95</td>
</tr>
</tbody>
</table>

*Requires CST-320 (CST-320/325/330/335)
Construction

NEW! Fischertechnik Kits
Discover, conceive, construct, build, learn. We call it “technology through play.” Fischertechnik construction sets and building systems can be used to awaken different interests for all age groups and school types, to promote talent and stimulate sustainable learning. The downloadable ROBO Pro Light software lets students program the models quickly and easily. Models can also be programmed with an app designed for use with Android tablets. Software is compatible with Windows 7, 8, and 10 and Android. Not currently compatible with Mac or Chromebook. See our website for more details and for our full line of Fischertechnik kits!

<table>
<thead>
<tr>
<th>Kit Code</th>
<th>Kit Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST-100</td>
<td>Fischertechnik Intro to STEM I</td>
<td>$99.95</td>
</tr>
<tr>
<td>CST-135</td>
<td>Fischertechnik Robotics: BT Beginner</td>
<td>$218.95</td>
</tr>
</tbody>
</table>

Star Coasters
With so many design variables to explore, your students will have a new learning adventure each time they build these high-speed ball roller coasters! Level 2 guarantees thrilling action rides that include wild rotations, daring loop-the-loops, hairpin turns, and spectacular swivel motions. After each ride, the steel sphere is hoisted back to its starting position by a battery-powered spiral conveyor elevator. Level 5 features multiple paths for steel balls to travel including a vertical corkscrew, a pendulum, seesaw drop, three-way split junction path, quadruple loop, and MUCH more! See page 88 for more details.

<table>
<thead>
<tr>
<th>Kit Code</th>
<th>Level</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAR-330</td>
<td>Level 2</td>
<td>$19.95</td>
</tr>
<tr>
<td>MAR-335</td>
<td>Level 5</td>
<td>$59.95</td>
</tr>
</tbody>
</table>

Balsa Wood Model Bridge Kit
At a loss for hands-on activities? Build a bridge! One of the most popular activities in middle and high school, building wooden bridges challenges students to solve problems creatively. Each kit comes with enough wood, adhesive, and competition design parameters for 24 students.

<table>
<thead>
<tr>
<th>Kit Code</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MID-250</td>
<td>$99.95</td>
</tr>
</tbody>
</table>
**OneCar**

OneCar is a comprehensive, open-ended STEM system that allows students to explore energy and motion in as many ways as they can imagine—without soldering! Every kit includes eight OneCars. Each has a low-friction car chassis, four wheels, and ample components that can be assembled and de-constructed for multiple use. Students can design, build, test, and propel their cars in six different modes, using a solar panel, electric motor, capacitor, kitchen chemicals, compressed air, propeller and more. Your students will be in the engineering fast lane as they learn about simple machines, Newton’s Laws, electrical circuits, renewable energy, chemical reactions, energy conversion and more! Sold as an eight-pack with ample Teacher’s Notes. Additional instruction downloads available online. Batteries not included.

**PHY-280 $129.00**

**NEW! 3D Pen**

Our 3D Pen puts the power of 3D printing right in the palm of your hand. Use it to create nearly anything you can imagine! Endless possibilities for your STEM classroom. Use it to create 2D objects on a hard surface, or create fully 3D objects. Uses eMate polymer filament—a low-temperature (70 ~ 100°C) material—perfect for student use. Comes with pen, charging cable, and three meters of eMate filament (color may vary). For ages 8+. Pen color may vary.

**CST-400 3D Pen $46.95**  
**CST-405 Six Color Refill $10.95**  
**CST-410 16 Color Refill $27.95**

**K’Nex Intro to Structures: Bridges**

Build 13 bridge models, one at a time. Using this 207-piece set, a three student team—through experimentation—can investigate how different bridge types hold their loads, and evaluate the strength and stability of each bridge type. For grades 3-6.

**KNX-750 $39.95**
**Physics: Ultraviolet Light**

**Nature “Sun” Print Paper**

Nature Print Paper produces beautiful, permanent prints from natural and man-made materials. This unique light-sensitive paper exposes in direct sunlight to create white on blue prints. When placed on the paper, flat objects such as leaves, photo negatives, coins, cut-outs, lace, etc. block the sun and provide the subject for the print. Exposure time is approximately two to three minutes (depending on the level of sunlight), then develop in water in seconds. It’s fast, safe, and leaves no mess. Nature Print Paper is great for any age group and includes full instructions. Each package contains 40 sheets of 12.7 x 17.8 cm (5” x 7”) light-sensitive paper. Also available in **Super Size** (11” x 17”).

Special multi-use **Press Print Frames** hold flat samples together without moving during exposure; no need for rocks or tape to hold the specimens. When finished, the frames may be used to display your prints. 19 x 24 cm (7.5” x 9.5”) Four frames/pkg.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>SPP-40</td>
<td>Nature Print Paper 40 Pack (5” x 7”)</td>
<td>$11.95</td>
</tr>
<tr>
<td>SPP-200</td>
<td>Super Size Paper 20 Pack (11” x 17”)</td>
<td>$14.95</td>
</tr>
<tr>
<td>SPP-310</td>
<td>Four Press Print Frames (7.5” x 9.5”)</td>
<td>$6.95</td>
</tr>
</tbody>
</table>

**UV Outside Detector**

This detector contains two UV detecting beads inside a clear plastic bottle preform. When the detector is shielded from UV radiation, the beads are white. When exposed to UV radiation (between 360 and 300 nm wavelength), the beads turn purple. This detector can change color thousands of times. Our favorite workshop give-away! Cap colors may vary.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>UV-360</td>
<td>Outside Detector</td>
<td>$3.50</td>
</tr>
<tr>
<td>UV-360A</td>
<td>100 Detectors</td>
<td>$249.95</td>
</tr>
</tbody>
</table>

**UV Color Changing Nail Polish**

When exposed to ultraviolet light from the sun (or other long-wave UV source), our UV nail polish changes color! When removed from sunlight, the nail polish returns to its original color! Although the product is great for nails, it can just as easily be painted on an index card or acetate to make an ultraviolet light detector that can be used for testing the effectiveness of sunscreen lotion or any other UV filter. 0.25 oz bottle.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>NP-530</td>
<td>Clear to Rose</td>
<td>$6.95</td>
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<tr>
<td>NP-540</td>
<td>Silver Glitter to Gold Glitter</td>
<td>$6.95</td>
</tr>
<tr>
<td>NP-560</td>
<td>Pink Pearl to Cranberry</td>
<td>$6.95</td>
</tr>
<tr>
<td>NP-585</td>
<td>Set of three (colors may vary)</td>
<td>$18.75</td>
</tr>
</tbody>
</table>

**Fluorescent Mineral Set**

These common fluorescent minerals are sensitive to long-wave ultraviolet (UVA) light and can be made to fluoresce using any of the fluorescent “black lights” in this catalog. Fluorescence is sometimes used to identify certain minerals and can change some rather ordinary looking rocks into marvels of colors and light. Once your students see these samples, they will be eager to test all the rocks they find and they won’t forget this uncommon addition to any mineral unit. Each set contains at least four samples.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>RM-400</td>
<td>Set of 4 rocks</td>
<td>$14.25</td>
</tr>
</tbody>
</table>

Find lesson ideas and product videos at [www.TeacherSource.com](http://www.TeacherSource.com)
Physics: Ultraviolet Light

Ultraviolet Detecting Beads - Now Available in Green!

Be dazzled by beads! Indoors, these beads are white— but don’t be fooled! Expose the beads to an ultraviolet light source (like the sun or a UV light) and watch the color magically appear! Use the beads with rawhide or a pipe cleaner for stylish, scientific jewelry!

Beads sold in 2 oz pkg (≈250 / pkg)

- **UV-RED**  White to Red  $6.95 / pkg
- **UV-ORG**  White to Orange  $6.95 / pkg
- **UV-YEL**  White to Yellow  $6.95 / pkg
- **UV-GRN**  White to Green - NEW!  $6.95 / pkg
- **UV-BLU**  White to Blue  $6.95 / pkg
- **UV-PUR**  White to Purple  $6.95 / pkg
- **UV-AST**  Assorted  $6.95 / pkg
- **UV-750**  3,000 Assorted Beads (bulk)  $54.95
- **UV-20K**  20,000 Assorted Beads (bulk)  $324.95

UV Filter Set

Set of two plastic disks, 7 cm (2.75") dia.; one absorbs UV (A & B) light, the other doesn’t. Great for experimentation with UV Beads!

**FIL-235**  $17.95

Rawhide

Perfect for making UV bead bracelets! (=three bracelets per yard.)

- **UV-RAW**  Rawhide  $1.00 / yard
- **UV-310**  Bulk Rawhide, 25 yards  $19.95
- **UV-KIT**  UV Bead Bracelet/Necklace Kit  $5.95

Contains 25 assorted UV Beads and one yard of rawhide!

Extra-Long Pipe Cleaners

Perfect for stringing beads. 12" long. White. Beads sold separately.

**UV-STEM**  100 Extra-Long Pipe Cleaners  $3.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Physics: UV & Glow-in-the-Dark

NEW! Let It Glow Kit
This fascinating, hands-on lesson will "shine a light" on the concept of different wavelengths of light in a way your students won’t forget! A do-it-yourself tabletop version of one of the most famous physics experiments of all time - the photoelectric effect. Using a red laser pointer and an array of colored gel filters, your students will discover which colors of light are able to "charge up" a phosphorescent square. Kit includes a 3" x 3" phosphorescent vinyl square, red laser pointer, a flashlight, four transparent gel filters in red, blue, yellow, and violet, and a lesson plan with student handouts.

UV No-Pop Bubbles!
Amazing No-Pop Bubbles, with a new twist! Under a UV/black light, these bubbles glow brilliantly. They work especially well with our UV Lights. You won’t believe your eyes!

Glow-in-the-Dark Pigment
This terrific pigment is used to make paint and other products glow in the dark. The pigment can be activated by just about any light source including sunlight, fluorescent, incandescent, and ultraviolet light. Use with our Chemical Light Sticks (see page 75) to demonstrate the pigment’s greater sensitivity to blue light.

Glow-Bright Concentrate
This 2 oz bottle of concentrated liquid will make over two gallons of liquid that fluoresces a brilliant yellow-green under an ultraviolet light. Mix with our Slime Kits (page 55) for glowing slime! Use it in the water when you expand our Growing Spheres (page 57)! You can even make glowing Instant Snow (page 58)! Caution: May stain some surfaces. Note: Unlike our Phosphorescent Vinyl, this liquid is not activated by white light; you must use a UV light.
Physics: UV & Glow-in-the-Dark

**Write and See Squares**

Move the Violet light across the Write and See Square and observe the brightly glowing trail. Violet light has enough energy to excite the phosphorescent pigment in the vinyl. The excited pigment then slowly releases energy as green light (the “glow” look). Contains a mounted sheet of phosphorescent vinyl ≈15 x 15 cm (6” x 6”) and a Violet Photon Light LED flashlight on a keychain ring. Great for kindergarten through college! A wonderful way to teach about Einstein’s photoelectric effect.

**Phosphorescent Vinyl Sheet**

This “glow-in-the-dark” material absorbs light and slowly emits it over a few minutes. By placing your hand over the sheet in the light, you can see your hand print (actually your hand’s shadow) “printed” on the sheet when it is placed in the dark. The material has a stick-on backing and can be cut with scissors. 12” wide.

**Chemical Light Sticks (8-Hour)**

For classroom demos! Chemical light sticks don’t create heat and are completely waterproof. Place one in warm water and one in cold water and observe the effect of temperature on the rates of chemical reactions. Nontoxic and safe for young children. Available in red, blue, or green, six inch or four inch. We recommend the four inch light sticks for individual student work and experimentation. Please indicate color when ordering.

**Liquid Light Demo Kit**

Demonstrate the primary colors of light without an expensive light-box! When red, green, and blue light are mixed, you get white. Included with each kit are six light sticks (two red, two green, and two blue), four plastic cups, two paper towels, and instructions for experiments. (Cutting device not included.)

**6" Ultra Hi-Intensity, 5-Minute Orange Light Stick**

Best for observing temperature effects! Put these in warm water for the brightest light sticks you’ve ever seen!
Physics: Lights

Photon MicroLights

These small, bright micro-flashlights are available in a spectrum of colors and perfect for a variety of experiments and student applications. Although MicroLights are not monochromatic, they come extremely close with their ultra-high intensity LEDs to a specific wavelength (except, of course, for white). The wavelength of the violet light is close enough to the UVA spectrum to excite fluorescent minerals or even hidden fluorescent dyes on currency and credit cards. Uses replaceable lithium batteries (included). Fits easily on a key chain. Demonstrate Einstein’s photoelectric effect using various colors and a square of our Phosphorescent Vinyl (page 75).

<table>
<thead>
<tr>
<th>Item #</th>
<th>Color</th>
<th>Color Spectrum</th>
<th>Beam Angle</th>
<th>Battery</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED-RED</td>
<td>Red</td>
<td>630 nm.</td>
<td>24° (wide)</td>
<td>BAT-50</td>
<td>$16.95</td>
</tr>
<tr>
<td>LED-ORG</td>
<td>Orange</td>
<td>605 nm.</td>
<td>15° (narrow)</td>
<td>BAT-50</td>
<td>$16.95</td>
</tr>
<tr>
<td>LED-YEL</td>
<td>Yellow</td>
<td>592 nm.</td>
<td>15° (narrow)</td>
<td>BAT-50</td>
<td>$16.95</td>
</tr>
<tr>
<td>LED-GRN</td>
<td>Green</td>
<td>525 nm.</td>
<td>30° (wide)</td>
<td>BAT-70</td>
<td>$16.95</td>
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<tr>
<td>LED-BLU</td>
<td>Blue</td>
<td>470 nm.</td>
<td>30° (wide)</td>
<td>BAT-70</td>
<td>$16.95</td>
</tr>
<tr>
<td>LED-VIO</td>
<td>Ultraviolet</td>
<td>405 nm.</td>
<td>≈30° (wide)</td>
<td>BAT-70</td>
<td>$16.95</td>
</tr>
<tr>
<td>LED-WHT</td>
<td>White</td>
<td>Full Spectrum</td>
<td>20° (narrow)</td>
<td>BAT-70</td>
<td>$16.95</td>
</tr>
<tr>
<td>LED-AST</td>
<td>All Seven</td>
<td>(All seven colors)</td>
<td></td>
<td></td>
<td>$94.95</td>
</tr>
</tbody>
</table>

Order LED-AST for $94.95 and get the full set of seven colors at a huge savings!

Persistence of Vision Double Fan

This two-headed fan does more than cool you off—it delivers a dazzling lesson in persistence of vision! Each fan blade contains five colorful LEDs that flicker at different speeds, giving the illusion of streams of light instead of individual dots. (This is the same principle that turns a sequence of still images into a motion picture.) Turn it on and enjoy a double light show in red, green, yellow, and blue. Better still, give the blades an extra spin to increase the speed of the rotating arm so that the two individual fan patterns merge into a larger, ever-changing geometric design: triangles, loops, spirals, and more! Uses three AA batteries (included).

OPT-370 $6.95

Try with our Prism Glasses (page 77)

Mini Fiber-Optic Light

We’ve never seen such an affordable fiber-optic lamp before! Using high quality fine optical fibers and an internally concealed LED light source, this light gives a beautiful shimmering effect! Makes a great demonstration of total internal reflection, not to mention that it looks cool in your classroom! This model has long fibers giving it a beautiful, “weeping willow” appearance. So affordable they could be party favors! Uses three L1154 batteries (included). ≈23 cm (9”) tall. Colors may vary.

OPT-275 Mini Fiber-Optic Light $3.95
BAT-55 Repl. Batteries pkg of 10 $5.95

Find lesson ideas and product videos at www.TeacherSource.com
Physics: Spectra

Is light a wave or is it a particle?

Rotate to resize slit

Our Prism Glasses use the same material as our Double Axis Diffraction Grating!

Pocket Spectroscopes

By varying the amount of light passing into the prism, this portable spectrooscope is able to resolve even very close or dim spectral lines. This makes identifying a light source easier and more accurate. Use for examining the spectral composition of white light, sodium vapor or mercury vapor street lamps, LEDs, neon signs, and more. 20 mm in diameter, 130 mm long when fully extended. Adjustable light aperture. Each quality spectroscope comes in its own beautiful wooden box.

ROY-100 $59.95

Rainbow Viewers

Just look at a light through these Rainbow Viewers and you are treated to a burst of colors. The secret lies in a special diffraction grating that separates the colors of the light into a spectrum of colors. Experiment by looking at different types of light bulbs, holiday lights, or fireworks. Made of durable cardboard, each Rainbow Viewer measures 4.3 cm (1.7") diameter. For ages 5+.

PG-605 Pkg of five $2.95
PG-630 Pkg of 30 $14.95

Prism Glasses (Double Axis)

These highly efficient, double axis, holographic diffraction grating lenses separate light from any source into its spectral components for study and analysis. Lenses are mounted in sturdy cardboard frames. Sold in sets of 10. Colors may vary.

PG-1 Set of 10 Prism Glasses $8.95
11-49 sets $7.95 each
50 or more sets $6.95 each

Hand-Held Spectroscopes

Reveal the hidden nature of color and visible light with this durably constructed, economical spectroscope. Measure the wavelengths of visible light from 4,000-7,000 Angstroms with the precision of ± 50 Angstroms using the built-in scale. Includes a link to instructions that include the history of light theory, diffraction gratings, and suggestions for numerous experiments.

SPC-100 $10.95

Diffraction Grating Material

Single axis diffraction grating gives brilliant spectra with fluorescent lights, flame tests, gas discharge tubes, or even holiday lights! 500 lines/mm. Double axis diffraction grating is the same as used in our Prism Glasses—double axis, holographic diffraction grating. Slides are 35 x 24 mm diffraction material mounted in 2" x 2" frame.

PG-400 Single Axis 6" x 24" sheet $6.75
PG-415 Single Axis 30 slides / pkg $17.75
PG-2 Double Axis 8" x 10" sheet $6.75
PG-3 Double Axis 30 slides / pkg $17.75

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Physics: Light

The Color Chaos Class Kit

This engaging experiment explains how we see color. Your students will use an assortment of colored beads, a trio of LED lights (in red, blue, and green), a battery, and their own powers of observation to demonstrate the science behind color perception. What happens when different colors of light shine upon different colors of beads? Our blue beads look blue because they reflect only blue light. But what do they look like if there isn’t any blue light? What does a red bead look like in blue light? What about purple? This class kit and lesson will help your students explore these concepts in a dramatic and memorable way. Includes 60 LEDs, 1,000 colored beads, 20 CR2032 batteries, and instructions available by download.

LGT-300 Color Chaos Class Kit $19.95
BAT-50 Repl. Batteries pkg of five $10.95

Color Splash Tablets

A stain-free alternative to food coloring! The tablets are available in the primary colors of blue, red, and yellow. From these colors, your students can create more than two dozen different colors. Each tablet contains a small amount of baking soda to help in the dissolving process. (≈100 tablets per bag.) Not a food product.

CSP-110 Pkg of 100 Red $4.95
CSP-120 Pkg of 100 Yellow $4.95
CSP-130 Pkg of 100 Blue $4.95
CSP-105 Jar of 200 Assorted $8.95

Nanosecond Bar

The Nanosecond Bar is a great way to demonstrate how fast light travels. This durable, three-dimensional bar is exactly 30 centimeters long—the distance light travels in a nanosecond (a nanosecond = one billionth of a second).

NAN-100 $4.95

Color Filter Paddles

Mix primary (red, blue, & green) and secondary (cyan, yellow, & magenta) filters to study additive and subtractive color mixing, color transmission, and absorption of different wavelengths of light. Polarizing filters can be used to show birefringence, light scattering, and light reflection. Diffraction gratings can be used for direct viewing and analysis of spectra from light sources. Included are 13,500 line/inch double axis and the 500 line/mm single axis gratings. Filters are 5.5 x 6.7 cm (2.16" x 2.63").

FIL-100 $18.95

Prisms: Equilateral & Right Angle

Equilateral prisms are often used for breaking up white light into a spectrum of colors, while right angle prisms are generally used for measuring critical angles and observing total internal reflection such as in fiber-optics. Made of optical glass or clear colorless acrylic plastic.

PSM-100 Equilateral 25 x 75 mm Optical Glass $7.95
PSM-110 Equilateral 25 x 75 mm Acrylic $6.95
PSM-130 Right Angle 35 mm face Optical Glass $7.95

Find lesson ideas and product videos at www.TeacherSource.com
**Physics: Lasers & Optics**

The faster you spin it, the more the colors separate!

**Mysterious Glowing Ball**

When stationary, this ball appears to glow with white light. When spun by the cord, one can see the white light separate into blinking red, blue, and green lights. Fascinating to watch in the dark. Great for reinforcing that white light can be produced by mixing three different colors of light. Advanced classes can relate it to the three different retinal color receptors in the back of the eye, and the persistence of vision. 6.4 cm (2.5") dia. Uses three L1154 batteries (included).

**New Low Price!**

**OPT-500** Mysterious Glowing Ball $6.95  **OPT-505** Jugglers’ Set of Three $17.50  **BAT-55** Repl. Batteries pkg of 10 $5.95

**Green Lasers (<5 mW)**

All Class IIIa Lasers are less than 5 mW, but the question is how much less? Our LSR-200 is almost 5 (4.95) mW, making it one of the brightest on the market.

These green lasers are perfect for applications where a continuous beam must be observed, such as when demonstrating lenses, prisms, or mirrors, or in long distance applications. Especially effective when observed in water. Great for large group demonstrations. As this is a true laser, please exercise care when using this fantastic and educational device. Class IIIa <5 mW 532nm. Uses two AAA batteries (included).

**New Low Price!**

**OPT-200** Deluxe $99.95  **OPT-225** Economy $42.95

**About Continuous Beam Lasers:**

Many green lasers blink on and off rapidly, often faster than the eye can perceive. This can impact the results of some experiments. Continuous beam lasers do not blink, resulting in a higher perceived brightness and requiring fewer reflective particles (dust or mist) to see the beam in the air. (All lasers require some reflective particles to be visible in air.)

**NEW! Light Modulator**

Demonstrate light modulation and communication with ease and leave your students in awe! The Light Modulator is a unique plug-and-play demonstrator of light modulation. The flashlight transmitter is plugged into a cell phone and the light beam transmits the sound to the solar panel receiver. The sound is loud and clear for all to hear! It easily teaches a number of concepts such as amplitude modulation, AC vs DC, fiber optics communication, persistence of vision, molecular kinetic theory, light properties, and more. Requires 3 AAA and 2 AA batteries and a cell phone or MP3 player.

**LGT-350** $98.95

**Diffusion Mist**

When this nontoxic aerosol is sprayed in a darkened room, a laser beam can be readily seen. Used in theaters to create special effects, a single can will spray for almost five minutes! 16 oz can, non-flammable and nontoxic.

**HS-7** $17.95  **New Low Price!**

Works great with our laser pointers!

**Red Laser Pointer**

High quality class IIIA <5 mW, 650 nm red diode laser at an incredibly low price! Each laser comes complete with batteries. These lasers are especially interesting with our Mirascope Mini (page 80) and our Diffusion Mist. *Please note: diode lasers are real lasers and should be treated with care and used responsibly.*

**New Low Price!**

**LSR-100** Red Laser Pointer $8.95  **BAT-55** Repl. Batteries pkg of 10 $5.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Physics

Centripetal Spinner

The prettiest demonstration of centripetal force and inertia we've ever seen! This perky, iridescent device reflects a dazzling rainbow as it spins. Twirl the stick and the thin ribbons spread into a bubble shape. The faster you spin, the wider the bubble becomes! It can be gently twisted by hand to make a delicate “flower” that neatly tucks itself into a tight ball. Endlessly fascinating!

PHY-250 $3.95

Plastic Mirrors

These high-quality plastic mirrors are perfect for student applications—even safe for young students! Available in many different sizes, they are durable and just right for mirror writing, periscopes, and many other experiments.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Size</th>
<th>Qty</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM-1</td>
<td>5&quot; x 7&quot;</td>
<td>1-10</td>
<td>$3.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 or more</td>
<td>$3.25</td>
</tr>
<tr>
<td>SM-2</td>
<td>8&quot; x 10&quot;</td>
<td>1-10</td>
<td>$6.95</td>
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<td></td>
<td></td>
<td>11 or more</td>
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<td>SM-3</td>
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<td></td>
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<td>$1.95</td>
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<tr>
<td>SM-4</td>
<td>3&quot; x 4&quot; periscope mirror (Use two to make a periscope!)</td>
<td>1-10</td>
<td>$2.15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 or more</td>
<td>$1.95</td>
</tr>
<tr>
<td>SM-458</td>
<td>2.5&quot; x 3.5&quot;</td>
<td>1-10</td>
<td>$1.65</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 or more</td>
<td>$1.40</td>
</tr>
</tbody>
</table>

Mirascope Mini

Project a real image that you can put your finger through. Using two concave, parabolic mirrors, a small object placed on the bottom appears to be floating as if real. A laser light even appears to bounce off the image! Visible 360 degrees! Includes a plastic frog. 15 cm (6") dia.

MIR-135 Mirascope Mini $7.95
MIR-125 Micro-Fiber Cleaning Cloth $1.95

Concave/Convex Mirror

Two mirrors in one! This compact and easily stored mirror is convex on one side and concave on the other. The concave side is front-surface—perfect for a physics unit on light and reflection. The mirror is 75 mm in diameter with a focal length of 200 mm. Made of high quality glass with beveled edges, this mirror is safe and long-lasting.

MIR-335 $7.95

Optics Kit

Versatile mountings and various optical components provide true hands-on experiences with reflection, refraction, dispersion, images, polarization, and other optical phenomena. Students will gain an understanding of fundamental optical principles by performing the 10 fully illustrated and annotated explorations provided. Designed to provide a maximum of versatility, enabling students to explore beyond the basics by enhancing set-ups and utilizing additional optical components. The one-time assembly (glue not included) of the mountings is simple and fun.

LGT-200 $79.95

Find lesson ideas and product videos at www.TeacherSource.com
Physics: Refraction

Super Quality Polarizing Filters

When two polarizing filters are placed atop one another, they can be transparent or opaque to light. By rotating one of the filters, the transmitted light passing through the filters may be turned "on" or "off." Certain materials such as polyethylene, cellophane tape, plexiglass, and corn syrup will exhibit beautiful colors when placed between two polarizing filters.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Size</th>
<th>Qty</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1-9</td>
<td>$3.75</td>
</tr>
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<td></td>
<td></td>
<td>10 or more</td>
<td>$3.45</td>
</tr>
<tr>
<td>PF-4</td>
<td>6&quot; x 6&quot;</td>
<td>1-9</td>
<td>$10.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 or more</td>
<td>$9.95</td>
</tr>
<tr>
<td>PF-5</td>
<td>15&quot; x 17&quot;</td>
<td></td>
<td>$65.95</td>
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<tr>
<td>PF-12</td>
<td>39&quot; x 17&quot;</td>
<td></td>
<td>$129.95</td>
</tr>
</tbody>
</table>

Mica

Everyone loves to pull apart the layers from a specimen of mica. One pound of mica from New England will provide samples for at least 30 students. When placed between two crossed polarizing filters, each different thickness appears as a different color. When one polarizing filter is rotated, the colors change. In our Mica Demo Kit, each piece of mica is approximately 8 x 8 cm and about as thick as card stock. Includes two 2" x 2" polarizing filters to view effects.

PF-8: Mica Demo Kit 1 piece of Mica 2 filters

RM-910 = One pound of Mica

$10.95

Calcite Crystals Iceland Spar

If you look at the words on a printed page through this crystal, you’ll see double. These natural, nearly transparent crystals exhibit the property of "birefringence," i.e., they can break light into two distinct polarized beams. Each crystal is about 2 x 2 x 4 cm.

PF-2 $6.95

Polarizing Tape Demo Kit

This special cellophane tape exhibits brilliant colors when placed between two polarizing filters. When one filter is rotated, the colors change. Create beautiful cellophane designs. Includes two 2.75" x 2.75" polarizing filters to view effects. See it in action on our website.

PF-7A Kit $8.75

PF-7 Tape only $1.95

Polarizing Filter Demo Kit

This kit contains materials and suggestions for more than 10 different experiments and demonstrations using polarized light. Each kit comes with these components: 2 2.75" x 2.75" polarizing filters, 1 Plexiglass stress tester, 5 sheets of acetate, 1 piece of polyethylene, 1 roll optically active cellophane tape, 1 piece of mica, and 1 calcite crystal (Iceland spar).

PF-1 Polarizing Filter Demo Kit $15.95

PF-6 Plexiglass Stress Tester with two 2" x 2" Polarizers $5.95
### Physics: Optical Illusions

#### Illusion Science

Everyone loves optical illusions. This kit gives students a chance to perform over 20 optical illusion experiments—including the classic morph illusion and Benham disk—while learning about the science behind them. A specially-designed 3D marker set is provided, as well as 3D glasses, a carrying pouch, and more. For ages 8+.

**GRN-430 $12.95**

#### Optical Illusion Card Deck

Truly an innovation. This deck of high quality playing cards includes a different optical illusion on every card... that's more than 52 illusions (including jokers). Use the cards for your favorite learning game or simply enjoy the myriad illusions throughout. We just love scanning through them. Use individual cards as rewards for hard working students.

**CARD-100 $7.95**

#### Chromadepth 3D Glasses

These glasses allow the wearer to perceive two-dimensional images in three dimensions! Through selective refraction, the transparent lenses in the Chromadepth 3D Glasses change the perceived depth of different colors. Anything printed in **red** appears to move toward you. Text and images in **blue** appear to move back behind the paper. Glasses work with an overhead projector, too! Package of 10.

**CLR-100 10 Glasses $10.95**

#### Magic Wire Illusion

Watch as two twisted wires are pulled apart, or are they? A fascinating illusion, these two wires appear to be untwisting from each other as you pull, but they never come apart. Does the wire get longer, or is something else happening? (Some assembly required.)

**OPT-350 $5.95**

#### Dioxide Glass Puzzle

Why would the cylindrical lens invert the blue colored word and not the red one? What is different? Can you test your hypothesis? Great critical thinking question for students of all ages! Perfect for a science table, display case, or even your desk! 12.2 x 6.6 x 6.6 cm (4.8" x 2.6" x 2.6") Lesson ideas included!

**PUZ-155 $19.95**

#### Disappearing Beaker

This clear beaker has no markings and bends light to the same degree as cooking oil. The borosilicate glass and the oil have roughly the same index of refraction. When this beaker is immersed into a larger container of oil, the beaker becomes invisible. Package includes the beaker and instructions. (Outer container and oil not included.)

**GL-500 Single beaker $9.95**

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**Find lesson ideas and product videos at [www.TeacherSource.com](http://www.TeacherSource.com)**
Physics: Sound & Waves

3D Standing Wave Machine
Create mesmerizing standing waves with a simple string by adjusting the speed of the machine’s two motors and the distance between them. In the dark, the light from red, green, and blue LEDs allows a full spectrum of brilliant color. The variations in standing waves are limitless! Great for teaching about nodes, antinodes, and wavelength. Uses four AA batteries (not included). 20" x 9.5"

OPT-400 $26.95

Wave Modeling Spring
This six-foot-long spring stretches to over 30 feet! Perfect for modeling standing and moving transverse waves as well as moving sound waves. Demonstrate the relationship between wavelength and frequency in a way your students will never forget. These gigantic springs have myriad uses in the classroom and lab.

SPR-1 $17.95

Super Size Wave Spring
This super size version of the ever-popular spring toy is a perfect way to demonstrate wave theory in a way your students will never forget. Easily model transverse and longitudinal or compression waves and teach the relationship between wavelength and frequency. Perfect for every physics classroom. Measures 80 mm in diameter, 160 mm in length, and stretches up to 8 meters.

SPR-215 $12.95

Talking Tapes
With this innovative product, students can actually make a paper or plastic cup talk! By rubbing a specially-molded plastic tape, the bottom of the cup is vibrated in just the right way to produce audible speech. The principle is the same as a diamond needle traveling through a record groove. These incredible tapes are sold separately in sets of 12 or as a kit with cups and complete instructions. Assorted tapes say things such as “Science Is Fun” and “Happy New Year.”

TC-150 Talking Cups Kit with 12 assorted tapes $16.95
TC-100 12 Assorted Tapes $10.95
TC-100A 12 “Science Is Fun” tapes $10.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Physics: Sound

Singing Rod
When you run your fingers lightly along this seemingly innocent metal rod, an ear-piercing shriek fills the air! Each Singing Rod comes with crushed rosin to lightly coat your fingertips. Great for teaching about longitudinal and transverse waves. Crushed rosin included. The Three-Tone Set consists of three rods of lengths 60, 80, and 100 cm. Each produces a different tone.

- SNG-100 Singing Rod $12.95
- SNG-300 Singing Rod Three-Tone Set $37.95
- SNG-150 Replacement Rosin $5.95

Did you know you can pour sound?

Singing Pipe
This heavy, black iron pipe (about 4 lb) has a metal alloy screen fitted into one end. By heating the screen with a flame from a burner for about 10 seconds, the vertical pipe will produce a loud tone for as much as 30 seconds. The noise is produced because certain frequencies of sound from the turbulent flow of heated air resonate within the tube cavity. Turning the tube horizontally disrupts the flow of air and the sound stops. A matched pair will produce a clearly audible beat frequency. Full instructions and explanation provided.

- HS-14 Single Pipe $34.95
- HS-14A Matched Pair $64.95

Energy Chimes
The Energy Chimes trio comes complete with hard-headed mallet and is pre-assembled to provide optimal sound for interference demonstrations. You can really hear the beats! Aesthetic and musical, it’s perfect for the classroom or for any physics aficionado.

- CHM-100 $27.95

Boomwhackers
These labeled tubes produce the C Major Diatonic Scale. The Basic Boomwhacker set includes eight tubes. Great for teaching about sound, frequency, and nodes 12”-24” long.

The Boomwhacker Bass Set produces the C Major Bass Diatonic Scale. This is a great addition to the basic set (BOM-150). Let your students explore the relationship between length and frequency. With the two sets, students discover that a long open tube produces the same frequency as a tube half the length with an end cap. The tubes in this set range in size from 24”-48”. Together the Bass set and the Basic set form a continuous scale.

The Octavator™ End Caps lower the pitch one octave. Fits all Boomwhackers (both the Basic and Bass sets). Each removable end cap easily snaps on either end of a Boomwhackers tube. Set of eight.

The 20 songs in the Boomwhacker Music Book are all color-coded to match the color of the Boomwhacker that plays the note. Includes Row, Row, Row Your Boat; Twinkle, Twinkle Little Star and more!

- BOM-150 Basic Boomwhacker Set $27.95
- BOM-120 Boomwhacker Bass Set $47.95
- BOM-130 Octavator™ End Caps $9.95
- BOM-110 Boomwhacker Music Book $5.95

Energy Chimes

Find lesson ideas and product videos at www.TeacherSource.com
Physics: Sound

**Pocket Sound Blaster**
Our Loudest Sound Demo!

Great for a school or club fundraiser!

Sounds like a loud truck air horn, yet it fits in your pocket. As you blow air through the side hole, the rubber diaphragm vibrates as the air pressure repeatedly increases and discharges. By lightly touching the diaphragm, you can produce different sounds. Colors may vary. 7.6 cm tall x 3.8 cm dia. (3“ x 1.5”).

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNG-600</td>
<td>Pocket Sound Blaster</td>
<td>$2.95</td>
</tr>
<tr>
<td>SNG-610</td>
<td>Pkg of six</td>
<td>$14.95</td>
</tr>
<tr>
<td>SNG-625</td>
<td>Pkg of 24</td>
<td>$48.95</td>
</tr>
</tbody>
</table>

**Thunder Drums**

This absolutely incredible theatrical musical instrument can create thunderous rumbling with a twitch of the attached spring. Simply hold the drum and shake to listen as the rumbling builds in intensity. Makes a great resonance demonstration. Styles may vary.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>TD-125</td>
<td>Thunder Drum 6“ x 6”</td>
<td>$36.95</td>
</tr>
<tr>
<td>TD-150</td>
<td>Thunder Drum 2.32“ x 7”</td>
<td>$14.95</td>
</tr>
</tbody>
</table>

**Sound Tubes**

Sound Tubes are an absolute favorite! When spun in a circular motion, these tubes produce a tone. As the Sound Tubes are spun faster, the tone steps up in frequency. Due to the harmonics of the tube, there is not a gradual increase in frequency. Use these with our Wave Modeling Spring (page 83) for a fantastic standing wave demonstration.

Use them to demonstrate how your vocal cords produce sound. Spinning the sound tubes around in front of your body or over your head creates low or high pitched sounds depending upon how fast you spin them. The sound is produced by air moving over the grooves in the tube. This principle is the same as the air passing from your lungs, though your throat, and out through your mouth that creates the sounds other people hear. Colors may vary. ≈76 cm (30“) long.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>SS-600</td>
<td>Sound Tube</td>
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</tr>
<tr>
<td>SNG-610</td>
<td>Pkg of six</td>
<td>$14.95</td>
</tr>
<tr>
<td>SNG-625</td>
<td>Pkg of 24</td>
<td>$48.95</td>
</tr>
</tbody>
</table>

**Chinese Spouting Bowl**

Hand crafted originals! Fill the 15” diameter bowl halfway with water and rub the handles with wet hands. The resonance set up within the bowl is powerful enough to actually “spout” water up and out of the bowl! Totally amazing! We’re sure you will be as impressed as we are.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<tbody>
<tr>
<td>SPT-100</td>
<td></td>
<td>$139.95</td>
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</tbody>
</table>

Call 203-74-TEACH (83224) or email info@TeacherSource.com
**Physics: Center of Balance**

**Balancing Bird Demo**

This eagle balances on almost anything—your finger, a pencil, or the edge of your desk. Its center of mass (or center of gravity) is generally beneath the tip of its beak. Students can change the eagle’s center of gravity by adding small pieces of tape or paper clips to have it balance perfectly. Our proud bird can even be used to demonstrate rotational inertia! Just balance it on a pencil above your head, and turn around 360 degrees. The bird will remain in the same orientation due to its fairly large moment of inertia. Each comes individually packaged with a stand. ≈16 cm (=6”) wing span. Colors may vary.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>CTR-200</td>
<td>Balancing Bird</td>
<td>$2.95</td>
</tr>
<tr>
<td>CTR-225</td>
<td>Set of 12</td>
<td>$28.95</td>
</tr>
</tbody>
</table>

**NEW! Balancing Bird Puzzle**

Our Balancing Bird Puzzle is a wonderful do-it-yourself physics puzzle for students of all ages. Comes with four pre-cut wooden pieces, four ceramic ring magnets and assembly instructions. No glue required. After they build their wooden birds, students must set the magnets along the bird’s wingspan to determine its center of gravity. But where, exactly, should those magnets be placed? That’s where the fun—and learning—begins! Measures approx. 15 cm (6”) tall with a “wingspan” of 20 cm (7.875”).

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>CTR-270</td>
<td>$3.95</td>
<td></td>
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</table>

**Did You Know?**

The center of gravity is the point at which all the weight of an object appears to be concentrated. The point at which an object balances is directly below its center of gravity. Students have difficulty with this concept, especially when it appears that the balancing point is not directly in the middle of an object.

**Tin Can Cable Car**

This do-it-yourself pulley system introduces young minds to some of the fundamentals of mechanical science. This kit comes complete with gears, pulleys, motor, reversing switch, and more. (You supply the soda can.) A wonderful chance to discuss electricity, friction, and more. Makes a great science fair project. Uses two AAA batteries (not included). For ages 8+.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>GRN-425</td>
<td>Tin Can Cable Car</td>
<td>$17.95</td>
</tr>
</tbody>
</table>

Find lesson ideas and product videos at www.TeacherSource.com
Physics

Kit includes:
- 10 Dropper Poppers (p. 101)
- 10 ping pong balls (p. 101)
- Five Reaction Rockets (p. 97)
- One Seismic Accelerator (p. 101)
- 12 BoInks (p. 101)
- 40 Rocket Balloons and Pump (p. 33)
- Five Mighty Seltzer Rockets (p. 97)
- Extensive Lessons
- Student Printables

Covers these topics:
- Law of Conservation of Energy
- Potential and Kinetic Energy
- Newton’s Laws of Motion
- Working with Variables

3-2-1 Blast Off! Kit

Our 3-2-1 Blast Off! workshop on forces and energy has become a standing-room-only event at NSTA conferences. Over the years, hundreds of teachers have asked us to develop a kit that bundles our much-loved demonstrations of things that go ‘bump’ in the day! Kit includes comprehensive teaching instructions and enough hands-on components for up to 10 students. (Safety glasses recommended, see page 126.) We’ve also created memory-refresher videos that walk you through each of the demonstrations, so you’ll be up to speed and ready to Blast Off in just minutes!

PHY-321 $94.95

Working Wood Catapult

Build your own miniature fully functional mangonel! What’s a mangonel, you ask? It’s the predecessor to the trebuchet, and was one of the earliest throwing devices in the Middle Ages. You probably know it as a catapult. Perfect for side-by-side comparisons and competitions with the trebuchet for distance and accuracy! 19 cm (7.5”) arm, 25.4 cm (10”) front to back, 15.2 cm (6”) wide, 12.7 cm (5”) tall. For ages 9+.

CAT-300 $19.95

Polymer Bead Demo

This amazing demo starts when one end of a 50' length of beaded chain is pulled over the edge of its container. As the end falls and accelerates, the chain rises higher than the rim and seems suspended in the air. Students see this as a discrepant event. They will ask to see it again and again. This demo is great for explaining self-siphoning polymers and Newton’s First Law. Holding the handle of the large mug (included) enhances the visibility.

MER-100 $19.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Physics: Wild Rides

The Wall Coaster
NOT your ordinary marble run!

Just find a wall and let your imagination soar and your marbles drop! The Wall Coaster uses the basic laws of physics and gravity to enable hours of fun and imaginative play. Comes with eight marbles and more than 16 feet of track and tubes! Super easy to use. For ages 5+.

Simply remove the track and tubes from the package, affix two small pieces of coaster tack (similar to standard reusable poster putty) to the back of the desired pieces, and press onto the wall. By trial and error you will learn which configurations work and which don’t—this is part of the fun! So many variations, you can almost lose your marbles! Colors may vary.

The Wall Coaster Stunt Kit includes extra track (seven long pieces, three medium pieces, and 10 short pieces), two pieces of tubing, four marbles, coaster tack, and several special shapes to make great new wall coasters!

The Deluxe Pack includes both the original Wall Coaster and the Stunt Kit. The Crazy Stairs Include coaster tack and two marbles.

MAR-600 The Wall Coaster $21.95
MAR-615 Wall Coaster Stunt Kit $29.95
MAR-625 Wall Coaster Deluxe Pack $46.95
MAR-630 Wall Coaster Crazy Stairs $7.95

Star Coasters

With so many design variables to explore, your students will have a new learning adventure each time they build these high-speed ball roller coasters! Level 2 guarantees thrilling action rides that include wild rotations, daring loop-the-loops, hairpin turns, and spectacular swivel motions. After each ride, the steel sphere is hoisted back to its starting position by a battery-powered spiral conveyor elevator. Comes with 193 pieces, two steel balls, and 10 meters (32.8 ft) of rail. Estimated assembly time is three hours. Suitable for ages 14+. Overall dimensions are 60 x 18 x 36 cm (23.6" x 7.1" x 14.2"). Uses one C battery (not included).

Level 5 features multiple paths for steel balls to travel including a vertical corkscrew, a pendulum, seesaw drop, three-way split junction path, quadruple loop, and much more! The ball’s journey ends (and begins again) on a battery-powered spiral conveyor elevator. Comes with 682 pieces, five steel balls, and 32 meters (105 ft) of rail. Estimated assembly time is eight hours. Suitable for ages 14+. Overall dimensions are 95 x 34 x 41 cm (37.4" x 13.4" x 16.1"). Uses one C battery (not included).

MAR-330 Level 2 $19.95
MAR-335 Level 5 $59.95

Air Power Soccer Disk

The Air Power Soccer Disk is perfect for demonstrating Newton’s Third Law of Motion: for every action, there is an equal and opposite reaction. The soccer disk glides on a cushion of air in a nearly frictionless environment. Uses four AA batteries (not included). 18.4 cm (7.25") diameter.

AIR-141 $12.95

Find lesson ideas and product videos at www.TeacherSource.com
Physics: Simple Machines

Hydraulic Arm Edge Kit
The Hydraulic Arm Edge is a DIY science construction kit that yields a kid-powered hydraulic robot arm capable of performing six different functions. An exciting introduction to hydraulics and basic engineering. The robotic arm allows users to command six axes of movements. Remove the gripper and you can activate the suction apparatus. This feature enables the user to elevate objects with a larger surface area (like a small mobile phone). Easy-to-follow instructions with detailed graphic illustrations pave the way for successful and satisfying kit building. No battery or motor required. Ages 10+. With 229 assembly parts, it will challenge beginner engineering enthusiasts. See our website for more details.

ROB-580  $52.95

Dance with our Stars: Robots and Sliders
Though they don’t perform on TV, these simple wind-up machines include levers and rotating cams, and show the change from elastic potential into kinetic energy. The Dancing Robot has a visible cam in its belly that moves its hips and arms while bobbing its head. The Slider uses a remarkable timing gear to switch between two different dance moves, including a split. Unique motors cannot be overwound. ≈10 cm (=4”) tall. Colors and styles may vary.

ROB-320  Dancing Robot  $4.75
ROB-325  Robot Slider  $4.75

ScooterArt
Our ScooterArt Kit lets students build their own robotic “Jackson Pollock” to explore many principles of engineering and robotics. Each bot stands on three legs made of water-soluble markers and relies upon a battery-operated pulsating motor to slide and skitter around, leaving a colorful trail behind. What happens if you change the length of one (or more) leg? Change the motor’s orientation or weight? Can you make your bot travel in a straight line? In a circle? Dozens of variables mean hours of open-ended experimentation! Single kit contains a DC motor, two AA batteries, three felt-tip markers, six double-sided adhesive foam squares, a plastic cup and instruction sheet with project ideas.

ROB-230  Single Kit  $6.95
ROB-235  Class Kit of 10  $55.95

Robotic Arm Kit
This amazing DIY construction kit will allow young explorers to understand how robotic servos and relays operate as they build a functional robotic arm of their own. Once complete, the robotic arm can be used for assisting action figures, creating robot art, or whatever a young imagination can devise. It uses five axes of motion and includes a gripper with a searchlight for use at night. Construction time is about two hours. Uses four D batteries (not included). For ages 10+.

ROB-570  $52.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Physics: Motion

Double Hand Spinners
Do fidget spinners really teach anything? You bet they do! Our Double Hand Spinners offer more teachable physics—at such a reasonable price—than almost anything we’ve seen. Start by using a single spinner to discuss all three of Newton’s Laws. Then attach the spinners together and observe how their contra-rotational motion can cancel out angular momentum. Go even further and add the six neodymium magnets (included) to the spinners’ arms to open up an exciting new area of exploration involving magnetic forces—both attraction and repulsion. Your students will be riveted by this memorable, unique demonstration. Includes two spinners, a connector, six neodymium ring magnets, and lesson. Colors and styles may vary. (PHY-255 will not work with magnets.)

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>PHY-255</td>
<td>Single Hand Spinner</td>
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<tr>
<td>PHY-270</td>
<td>Double Hand Spinner Kit</td>
<td>$16.95</td>
</tr>
<tr>
<td>M-187</td>
<td>25 Neodymium Ring Magnets</td>
<td>$19.95</td>
</tr>
</tbody>
</table>

Inverting Pop Tops
When these small wooden tops are spun, they start precessing until the heavier hemispherical end is lifted, seemingly against gravity. The natural wood ones can be decorated by students. 3.8 cm (1.5”) tall, 3.2 cm (1.25”) dia.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
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<tr>
<td>TOP-300</td>
<td>Pkg of five Natural</td>
<td>$5.95</td>
</tr>
<tr>
<td>TOP-305</td>
<td>Pkg of 20 Natural</td>
<td>$19.95</td>
</tr>
<tr>
<td>TOP-330</td>
<td>Pkg of five Red</td>
<td>$5.95</td>
</tr>
<tr>
<td>TOP-335</td>
<td>Pkg of 20 Red</td>
<td>$19.95</td>
</tr>
</tbody>
</table>

Mysterious Spinning Top
Give this top a spin and watch it move for hours without stopping. Secret revealed: The top contains a small magnet. When this magnet moves past the center of its base, the top’s spinning magnetic field induces a current in a coil, which closes a switch, allowing a battery to momentarily energize a small electromagnet. The top increases its rate of spin and moves away from the center of the base. Top: 2.5 cm (1”), Base: 8 cm (3.1”) Uses one 9-volt battery (not included).

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<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>TOP-375</td>
<td></td>
<td>$11.95</td>
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</table>

Classic Gyroscope
The toy gyroscope has been in production since 1917 and has been a classic educational tool for generations. Use the power of physics to balance the gyroscope on its pedestal, a fingertip, the edge of a glass, or even a string. Gyroscopes are used in robotics, space exploration, and they are even used to stabilize movie cameras. Each gyroscope is packed in a clear styrene box with starting string, pedestal, and instructions for several amazing tricks. 4.75” tall.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>GYR-270</td>
<td></td>
<td>$8.95</td>
</tr>
</tbody>
</table>

Revolution Top
This amazing, magnetically levitated top spins horizontally! Spin the top and observe the patterns created by the alternating colors and your persistence of vision. The device operates in a very low-friction environment. Take it for a spin! Colors may vary.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>TOP-205</td>
<td></td>
<td>$9.95</td>
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</table>
Physics: Motion

The PhiTOP

When spun, this beautifully crafted top starts out horizontal and then, surprisingly, stands upright. In the process, it illustrates the difference between equilibrium and stability. It will spin for minutes on end, producing a marvelous optical illusion as it slows down. Invented by astrophysicist Kenneth Brecher, the PhiTOP encourages exploration of force, mass, density, gravity, friction, and time. In short, the PhiTOP is an elegant scientific, mathematical, and aesthetically-pleasing object that makes a perfect gift, desktop display piece, or student stumper. See for yourself in our video! Egg is ≈5 cm tall (2”).

TOP-410 $19.95

Euler’s Disk

Spin the disk and enjoy a hypnotic light display with ever-changing sound. The disk seems to spin forever, rotating and precessing as it slowly transforms gravitational potential energy into kinetic energy. Concave mirror base reflects the disk’s spectacular effects. Try it in a darkened room with a flashlight or laser. Includes magnetic holographic film for extra dazzle. Disk diameter 7.5 cm, mirror diameter 20 cm.

TOP-400 $33.95

Jitter Ring

Rotate the large steel ring vertically and five smaller rings spin horizontally like tops. As the larger ring rubs on the inside of the smaller rings, energy is transferred, maintaining the spinning motion. Great for showing energy transfer and gyroscopic motion! Can you throw it back and forth while keeping the smaller rings spinning? Requires practice, but amazing to see. 25 cm (10”).

SS-180 $15.95

The Vortx™

When coins are dropped from the launching ramps, they begin spinning tangent to the curved surface, traveling in a circular motion. As the coins spin into the well, their rotational velocity greatly increases. Use the Vortx as a bank for your loose change. Great for teaching gyroscopic motion, rotational energy, the law of conservation of energy, and more. 38 cm (15”) high.

SS-400 The Vortx™ $26.95
Two or more $23.95 each

Light Up Gyro Wheel

Here’s a new take on a retro “toy” that mesmerizes while it teaches! Demonstrate the conversion of potential energy to kinetic energy and back again. The colorful wheel has a hidden LED light inside. As soon as the magnetic edges of the wheel touch the metal rails, the LED lights up—a perfect demo of open and closed circuits! Simply tip the rail to begin the spinning motion. Colors may vary.

GYR-285 $3.95

www.TeacherSource.com/category/newsletterlibrary
Physics: Motion

Rattlebacks

A Rattleback is a half-ellipsoid object carved so that it will spin in only one direction. Accidentally discovered by archaeologists, this curious object was first dubbed a celt stone, named after the prehistoric axes and adzes they were studying. Idly spinning one of these ancient tools on the table, these scientists must have been surprised to discover that the seemingly normal piece of carved stone would spin freely in only one direction. ≈10 cm (4”) long, 2 cm (0.8”) wide.

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>SS-310</td>
<td>Five Rattlebacks</td>
<td>$7.95</td>
</tr>
<tr>
<td>SS-335</td>
<td>12 Rattlebacks</td>
<td>$16.95</td>
</tr>
<tr>
<td>SS-323</td>
<td>30 Rattlebacks</td>
<td>$34.95</td>
</tr>
</tbody>
</table>

Wacky Hall Walker

With this not-so-simple machine, your students investigate the amount of potential energy given the rubber band vs. the distance traveled by the Wacky Hall Walker. After collecting data and graphing the results, students can be challenged to make their Wacky Hall Walker travel a certain distance. Includes lesson plans. Some assembly required.

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Description</th>
<th>Price</th>
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<tr>
<td>WHW-100</td>
<td>Single Kit</td>
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</tr>
<tr>
<td>WHW-115</td>
<td>Class Kit of Six</td>
<td>$54.95</td>
</tr>
<tr>
<td>WHW-120</td>
<td>Six Replacement Rubber Bands</td>
<td>$9.95</td>
</tr>
</tbody>
</table>

The SpillNot

The SpillNot is a fabulous solution to the ubiquitous problem of spills when carrying liquids. The fundamental laws of physics will easily and surprisingly keep the contents in the container! A very functional item that also graphically illustrates the effects of centripetal force. Your cup will not runneth over!

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>PHY-300</td>
<td>$12.95</td>
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</table>

Rheoscopic Fluid

Captivate your students with this unique fluid. Its suspended pearly crystals show current movement continually. This nontoxic, pearly white substance is a water-based suspension. When warmed or cooled, strong convection currents appear. Appropriate for all grade levels K-college. Although the fluid ships colorless, it may be easily tinted with food coloring. ≈1 L (32 oz).

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Description</th>
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<tr>
<td>RH-100</td>
<td>$16.50</td>
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 Runs straight... Perfect for races!

Squiggle Ball

The Squiggle Ball has the amazing ability to navigate out of corners—even simple mazes! In fact, it’s virtually impossible to block. The ball's transparent case allows your students to view the specially-weighted motor inside. Uses one AA battery (not included). ≈8.5 cm (3.3”) dia. Colors may vary.

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>SS-350</td>
<td>$8.95</td>
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</tbody>
</table>
Physics: Motion

**ScooterBots**

With colorful chenille stems, wiggly eyes, and a toothbrush head body, our ScooterBots are as adorable as they are educational. What makes them go? A battery-powered pulsating motor causes the individual bristles (or legs) to vibrate and shimmy, sending the bot scooting across any flat surface. Dozens of variables are possible. What happens if you trim or bend the bristles? Connect several bots together? Add stabilizing wire legs? A memorable way to teach principles of engineering and electric circuitry. Kit contains all you need to create these mini-marvels, including instructions.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
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<tbody>
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<td>ROB-210</td>
<td>ScooterBot 10 Pack</td>
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</tr>
<tr>
<td>ROB-225</td>
<td>ScooterBot 25 Pack</td>
<td>$65.95</td>
</tr>
<tr>
<td>BAT-55</td>
<td>Repl. Batteries pkg of 10</td>
<td>$5.95</td>
</tr>
</tbody>
</table>

**Newton’s G-Ball**

Students can use this clever device to easily study the effects of gravity. A digital timer in the center measures the amount of time the ball is in the air. The timer begins when the display button is released, and it stops when the ball is caught or hits a surface (maximum 12 meters—about three stories—when dropped onto a fairly soft surface). Students can throw the ball straight up, horizontally, or let the ball drop to calculate the height, velocity, or magnitude of gravitational acceleration. Diameter 10 cm (≈4”). Uses two LR1130 batteries (included).

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY-200</td>
<td>G-Ball</td>
<td>$34.95</td>
</tr>
<tr>
<td>BAT-60</td>
<td>Repl. Batteries pkg of 10</td>
<td>$10.95</td>
</tr>
</tbody>
</table>

**Newton’s Apple**

What is a Newton? It is the force equal to the weight of an average apple (mass of 102 g). What better way for your students to visually understand Sir Isaac Newton’s idea of F=ma than to drop a 1 Newton foam apple on someone’s head? They will remember it forever! Set of six includes lesson ideas.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA-95S</td>
<td>Single Foam 1 N Apple</td>
<td>$6.95</td>
</tr>
<tr>
<td>NA-100</td>
<td>Set of six Foam 1 N Apples</td>
<td>$29.95</td>
</tr>
</tbody>
</table>

**Flow Ring**

Constructed from a single strand of thin, flexible metal, the Flow Ring is both a kinetic sculpture and a mesmerizing flow toy. With one look, you’ll see why it has been called a “4th dimensional Slinky.” Folds flat and pops open into a beautiful 3D geometrical shape. Slip it on your arm or a rope and watch its translational energy change to rotational energy! Centripetal (seeking the center) forces hold the bands in their curved shape as they spin along your arm, instead of “flying off on a tangent”. The effect is remarkable: the Flow Ring begins spinning while simultaneously falling, creating the illusion of a silver bubble. The secret is in how the metal is wrapped—the ribbon coils through itself, forming a torus knot. Get ready to be astonished as you watch this spherical toroid ring roll, bend, and flow. Comes with storage pouch.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY-265</td>
<td>Flow Ring</td>
<td>$11.95</td>
</tr>
</tbody>
</table>

Call 203-74-TEACH (83224) or email info@TeacherSource.com
**Energy: Thermal Energy**

### Liquid Crystal Sheets

So hands-on, you won’t be able to keep your hands off! Note: the color change is very much dependent upon the ambient temperature. Each color seen is a different temperature.

**20-25°C Transition (68-77°F)**

Perfect for showing the effect of samples cooler than room temperature, such as ice cubes and endothermic reactions!

<table>
<thead>
<tr>
<th>Item</th>
<th>Size</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC-2025A</td>
<td>12&quot; x 12&quot;</td>
<td>$25.95</td>
</tr>
<tr>
<td></td>
<td>11 or more</td>
<td>$23.95 ea.</td>
</tr>
<tr>
<td>LC-2025B</td>
<td>4&quot; x 4&quot;</td>
<td>$7.95</td>
</tr>
<tr>
<td></td>
<td>11 or more</td>
<td>$6.95 ea.</td>
</tr>
</tbody>
</table>

**25-30°C Transition (77-86°F)**

Perfect for showing the effect of samples slightly higher than room temperature, such as hand prints and exothermic reactions!

<table>
<thead>
<tr>
<th>Item</th>
<th>Size</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC-2530A</td>
<td>12&quot; x 12&quot;</td>
<td>$25.95</td>
</tr>
<tr>
<td></td>
<td>11 or more</td>
<td>$23.95 ea.</td>
</tr>
<tr>
<td>LC-2530B</td>
<td>4&quot; x 4&quot;</td>
<td>$7.95</td>
</tr>
<tr>
<td></td>
<td>11 or more</td>
<td>$6.95 ea.</td>
</tr>
</tbody>
</table>

**30-35°C Transition (86-95°F)**

Perfect for showing the effect of samples higher than room temperature, such as hot coffee and heat from a light bulb.

<table>
<thead>
<tr>
<th>Item</th>
<th>Size</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC-3035A</td>
<td>12&quot; x 12&quot;</td>
<td>$25.95</td>
</tr>
<tr>
<td></td>
<td>11 or more</td>
<td>$23.95 ea.</td>
</tr>
<tr>
<td>LC-3035B</td>
<td>4&quot; x 4&quot;</td>
<td>$7.95</td>
</tr>
<tr>
<td></td>
<td>11 or more</td>
<td>$6.95 ea.</td>
</tr>
</tbody>
</table>

### Liquid Crystal Sample Assortment Package

Not sure which temperature to purchase? Try our sample assortment. Included are three 4" x 4" square samples of liquid crystal: one 20-25°C, one 25-30°C, and one 30-35°C. Each sample has an adhesive backing. Can be easily cut on a standard paper cutter.

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC-ASTX</td>
<td>$19.95</td>
</tr>
</tbody>
</table>

### Touch and See Square

Place your hand on this black plastic square and create a beautiful thermal hand print. Each color represents a different temperature. Can be used over and over again. Great addition to your “Hands-on Science Table.” ≈6” x 6” square. Each square is mounted on foam board.

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS-900</td>
<td>$12.95</td>
</tr>
<tr>
<td></td>
<td>$11.95 each</td>
</tr>
</tbody>
</table>

### Putt Putt Steam Boat

Originally called “Putt Putt Steam Boats” in the 1920s, these reproduction toys can be used to teach many scientific principles. Using a small flame from a candle or a few drops of cooking oil, the 10 cm (4”) long boats will chug along for hours. It is great for demonstrating the transformation of heat energy to mechanical energy. More advanced students can be given the problem of explaining how it works. Fascinating to watch in a circular pan of water. Colors may vary. Fuel Candles come in packs of eight.

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB-100</td>
<td>$8.95</td>
</tr>
<tr>
<td>SB-150</td>
<td>Fuel Candles pkg of eight</td>
</tr>
</tbody>
</table>
Bimetallic Jumping Disk
A curved jumping disk? The sky’s the limit for these disks, which have two layers of bonded metals with different thermal expansion properties. A change in temperature causes these disks to jump approximately 12 inches or higher into the air! Simple enough for elementary students; challenging enough for AP physics classes! 25 mm (1”) dia.
HEA-450 10 disks $15.95

A fun, scientific way to make ice cream with your class!

Soft Shell Ice Cream Ball
Fill one side with ice, add rock salt, and close the lid securely. Mix up your favorite ice cream ingredients and pour the mix into the cylinder on the opposite end of the ball.

Great way to teach how adding salt to ice lowers the temperature of the resulting solution. Pint Size takes 15 minutes. Quart Size weighs more than twice as much as the smaller version of the Soft Shell and takes 20 minutes. Colors may vary.

The Colors and Flavors include chocolate fudge, black raspberry, mint chocolate, and strawberry. Each 1.7 oz bottle will flavor three quarts of ice cream.
ICE-140 Pint Size Ball $34.95
ICE-145 Quart Size Ball $45.95
ICE-130 Ice Cream Colors and Flavors $12.95

Amazing Ice Melting Blocks
Totally awesome to watch! Place an ice cube on each of these two seemingly identical blocks. One ice cube instantly begins to melt and is gone in about 90 seconds while the other shows no evidence of melting. Great for showing the disparity in heat conductivity of different materials. This demo is simple enough for elementary students yet also challenges high school or university level students. Invented by retired teacher Jim Housley. Set of two blocks, 9.5 x 9.5 cm (3.75” x 3.75”) each.
BLK-100 Set of two blocks $22.95

Use with our IR Thermometer (page 130) to show that before ice is placed on blocks, the blocks are both at thermal equilibrium.
Energy: Rockets

Piezo Popper Kit

These amazing piezoelectric devices generate a few thousand volt sparks at the touch of a button. No batteries required. The discharge is created when a small hammer inside the device strikes a quartz crystal. It can be used as a safety lesson to demonstrate the flammability of alcohol or perfume. Igniting two drops of alcohol in a film canister (below) will cause the canister to fly more than 20 feet into the air!

Not available for international shipping.

<table>
<thead>
<tr>
<th></th>
<th>Piezo Popper Kit</th>
<th>13-99 kits</th>
<th>100 or more kits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS-2A</td>
<td>$7.95</td>
<td>$7.25 each</td>
<td>$6.95 each</td>
</tr>
</tbody>
</table>

Articulating Stomp Rocket System

Your students will have a blast building their own Stomp Rockets and launching them outside for hands-on experiments related to Newton’s laws, energy transfer, aerodynamics, and more variables than we can name! Our Stomp Rocket launch pad is built from durable components that will provide years of service. Includes 11 distance marker flags, a protractor, and directions for downloading step-by-step assembly instructions, a rocket template, teaching lessons, and student printables. Can be modified for use in K-12 classes. Soda bottle not included.

RKT-210 | $25.95

Rocket Film Canisters

These canisters are perfect for building your Alka-Seltzer rockets! The tight fitting lid allows the pressure to increase enough for the rocket to fly several feet into the air. Great activity for changing the variables; amount of tablet, amount of water, with or without a nose cone, with or without fins, the way the paper rocket is rolled, etc. Online lessons include complete instructions for building film canister rockets. Also great for geocaching.

<table>
<thead>
<tr>
<th></th>
<th>Pkg of 12</th>
<th>Pkg of 30</th>
<th>Pkg of 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAN-300</td>
<td>$7.95</td>
<td>$15.95</td>
<td>$44.95</td>
</tr>
<tr>
<td>CAN-330</td>
<td>$7.25 each</td>
<td>$6.50 each</td>
<td>$6.25 each</td>
</tr>
</tbody>
</table>

See our website for a blog about how to make a film canister into a small leyden jar to store electricity: blog.teachersource.com
Energy: Rockets

Reaction Rocket

Appearances can be deceiving. This rubber ball launcher and plastic rocket may look simple, but they’re a sure-fire way to provoke a WOW reaction—and introduce students to Newton’s Laws. Hold the top of the launcher and drop it straight down onto a hard surface. The rocket shoots up dramatically higher than its original drop height. Explaining energy conversion was never this easy…or this much fun! Comes with one launcher, two rockets. Class Kit includes 15 launchers and 30 rockets. Colors may vary.

RKT-625  Single Rocket  $2.95
RKT-630  Class Kit  $39.95

3-2-1 Blast Off! Kit

Our 3-2-1 Blast Off! workshop on forces and energy has become a standing-room-only event at NSTA conferences. Over the years, hundreds of teachers have asked us to develop a kit that bundles our much-loved demonstrations of things that go “bump” in the day! Kit includes comprehensive teaching instructions and enough hands-on components for up to 10 students. (Safety glasses recommended, see page 126.) We’ve also created memory-refresher videos that walk you through each of the demonstrations, so you’ll be up to speed and ready to Blast Off! See page 87 for more details.

PHY-321  $94.95

Mighty Missile Launcher Class Kit

Place a missile on the launcher, aim and fire! The soft tipped missile is launched by a burst of air from punching a balloon and travels as much as three meters (10’). Perfect for controlling the variables: direction, angle, and velocity of air. Challenge your students to hit a target, e.g., a small box lid. Kit contains 40 rockets and 10 launch pads. The rockets are pre-made and ready for firing. The launch pads require a hot glue gun to assemble. Colors may vary.

RKT-615  $39.95

Mighty Seltzer Rocket

Five, four, three, two, one, LIFT OFF! This cleverly designed rocket with nose cone and fins will travel 20 to 30 feet into the air. Simply pour in water, drop in a seltzer tablet, replace the end cap, and the rocket is prepared for launch. To activate, invert the rocket, place it on a flat surface and move away. The rocket is 12.5 cm (5”) long. Adult supervision and eye protection recommended. Not for indoor use. Four seltzer tablets included. Teacher Pack includes five Mighty Seltzer Rockets and 10 seltzer tablets. Colors may vary.

RKT-555  Mighty Seltzer Rocket  $6.95
RKT-557  Teacher Pack of five  $25.95
RKT-560  36 Seltzer Tablets  $7.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Energy: Engines

Exergia Electricity from Hot Water Learning Kit
This kit demonstrates the direct conversion of heat into electrical energy via the Seebeck effect. Like in photovoltaic cells, the generation of electricity results from processes on an atomic scale without macroscopic movement of mechanical parts. The atomic vibrations that correspond to heat result in a gradient of the electron’s distribution, i.e., an electrical voltage. Includes Peltier module, two acrylic plastic reservoirs, motor with propeller, fasteners and screws, and assembly instructions.

HS-210 $39.95

Stirling Engine with Alcohol Burner
Nearly a century after it was invented, the Stirling Engine is still a unique and fascinating heat machine. Our desktop model allows your students to witness thermodynamics in action! The Stirling Engine Model uses a closed-cycle system in which air is compressed and expanded at different temperatures to create energy. Vividly demonstrates how thermal expansion and cold shrinkage can create enough mechanical energy to power an engine, and then have that mechanical energy converted to electrical energy to light four LEDs. The alcohol burner heat source is secured in a recessed well on the finished wooden base for safety. Engine can be run repeatedly for a memorable lesson in thermodynamics. 7” wide, 3.5” deep, 3.25” high.

ENG-300 $99.95

Wilesco Mini Steam Engine
This Wilesco Mini Steam Engine is smaller than most other steam engine models. Heated with a tea light, the filigree oscillating cylinder purrs up and down and drives the sparkling flywheel. You will take delight in watching this mechanical masterpiece. The boiler capacity lasts for a run of more than 30 minutes. Baseplate: 70 x 70 mm, height: 120 mm, weight: 0.2 kg.

ENG-200 $99.95

Exergia Threewheeler with Thermoelectric Drive Learning Kit
This kit demonstrates the direct conversion of heat into electrical energy via the Seebeck effect. Like in photovoltaic cells, the generation of electricity results from processes on an atomic scale without macroscopic movement of mechanical parts. The atomic vibrations that correspond to heat result in a gradient of the electron’s distribution, i.e., an electrical voltage. Dimensions: diameter ≈100 mm, height ≈150 mm. The included candle gives an operation time of about three to four hours.

HS-205 $45.95
Energy: Energy Conversion

Giant Glass Drinking Bird

Is it a demonstration of scientific law or a work of art? Made of hand-blown glass, this striking piece will surely be a point of conversation in your classroom, office, or home! Just place a glass of water in front of it, dip its beak to get it wet, and this bird will keep going as long as you keep it supplied with water! The movement is mesmerizing and will have everyone wondering how and why it works! 25 cm (9.8") tall. Colors may vary.

DB-125 $29.95 each

Drinking Bird

Simply moisten the bird’s head with water, place it next to a full glass of water and watch as the bird periodically dunks its head into the glass for a “drink.” It continues for hours. Scientific explanation on our website. 15 cm (6") tall. Colors may vary.

DB-100 Drinking Bird $5.95
DB-110 Pkg of 12 $64.95

Newton’s Kinetic YoYo

With a flick of the wrist, set the spheres in motion. As the first sphere swings around, it stops and transfers its energy to the second ball, forcing it to swing around. With practice, students can even make the spheres ricochet off one another above and below the handle. Colors may vary. Two sizes: small 10 cm (4") handle or large 20 cm (8") handle.

NE-100 Five large yo-yos $6.95
NE-125 12 small yo-yos $6.95

Newton’s Cradle

Find hours of entertainment with the best Newton’s Cradle we’ve ever seen for the price! Perfect for teaching your students about Newton’s laws of motion, makes a great addition to any classroom. ≈18 x 12 x 18 cm (7” x 4.5” x 7”).

NEW-100 $19.95

Magnetic Accelerator Paradox

Place three seemingly identical spheres on a 3-foot horizontal track touching each other. Slowly roll another sphere into the spheres at rest. Wow! All of a sudden one sphere takes off with tremendous velocity. Has the system gained energy? Could this be the basis of a perpetual motion machine? Hmm… Great for open-ended discovery! Flexible track with six spheres. Colors may vary.

MAG-400 Magnetic Accelerator $29.95
MAG-415 Six extra spheres for additional experimentation $10.95

“I use these birds to have students make observations and inferences, demonstrate heat engines and discuss thermal expansion. Endless possibilities!”
- Diedre A., West Terre Haute, IN

Talk about a discrepant event!

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Energy: Energy Conversion

Handboilers
Great vapor pressure demonstration! When the handboiler is held in your warm hand, liquid quickly travels from the bottom bulb to the top along with numerous bubbles, giving the appearance of boiling. These new and improved hand-boilers are made from a thicker glass and less likely to break. Due to the chance of breakage, they are not toys and are not recommended for young students. Sold individually and in cases of 12. ≈16.5 cm (6.5") tall. Colors and styles may vary.

HB-100  Handboiler  $5.95
HB-125  12 Handboilers  $59.95

Smashing! Steel Sphere Demo Kit
When these two 1-pound, 2" diameter, chrome steel spheres are smashed together, enough heat is generated at the point of contact to burn a hole in a piece of ordinary paper! This amazing demonstration graphically illustrates the conversion of mechanical energy into heat energy. Although there are no flames, a charred hole appears along with the odor of burnt paper. Kit contains two steel spheres and instructions.

HS-8  Set of two  $28.95

Radiometer
Originally designed by William Crooke in the 1860s, the radiometer still fascinates both young and old. When light shines on the four diamond-shaped vanes, the paddle wheel spins at up to 3,000 rpm. Great for illustrating the conversion of light energy into mechanical energy. Each vane is black on one side and white on the other. Because the black surface absorbs energy better than the white reflective side, the air molecules move faster near the black surface.

RAD-105  $12.95

Horizontal Handboiler Demonstration
Transfer liquid back and forth using the heat of your hand! Amazing to see! Fascinates students! Challenge: Can you find a way to obtain clear liquid on one side and solid red dye on the other? Suggestions for experiments provided. 3.8 cm (1.5") dia. bulb, 18 cm (7") apart. Colors may vary.

HB-200  $7.95

See our website for distillation activity.

Preserve shock wave in aluminum foil!
Burns holes in paper upon impact!

New Low Price!
Energy: Energy Conversion

Dropper Poppers
A Dropper Popper is more than just half of a rubber ball. This incredible device seemingly defies the laws of physics by bouncing higher than where you dropped it! Requires a small amount of “activation energy” to work. It is molded into a special shape that allows it to store elastic potential energy and then convert it to kinetic energy with a POP when dropped. Dropper Poppers make an engaging demonstration for any physics or chemistry class! 5.7 cm (2.25”) diameter.

Try This: Invert a Dropper Popper, place a ping pong ball inside the cavity, and drop the Popper onto a hard surface with the ping pong ball on top... Be sure to wear goggles and have a high ceiling, or better yet, no ceiling at all!

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>POP-100</td>
<td>One Popper</td>
<td>$2.75</td>
</tr>
<tr>
<td>POP-107</td>
<td>One Popper and two Ping Pong Balls</td>
<td>$3.45</td>
</tr>
<tr>
<td>POP-112</td>
<td>Two Poppers and 10 Ping Pong Balls</td>
<td>$7.75</td>
</tr>
<tr>
<td>POP-124</td>
<td>20 Poppers and 40 Ping Pong Balls</td>
<td>$54.95</td>
</tr>
</tbody>
</table>

Seismic Accelerator
The Seismic Accelerator illustrates the laws of conservation of momentum and energy during a supernova. Several balls are threaded on a plastic shaft. When the apparatus is dropped straight downward onto a hard surface, the top ball can rebound to a height equal to five times the original drop. WOW! Leads to an interesting discussion of what’s happened due to the Law of Conservation of Energy. Safety glasses included.

<table>
<thead>
<tr>
<th>Code</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS-150</td>
<td>$12.95</td>
</tr>
</tbody>
</table>

Bo!nks
Spring your way into your energy unit! Compress the plastic woven tube, release it, and watch it fly! Students love experimenting with Bo!nks. What a great way to demonstrate elastic potential energy! Four Bo!nks, colors may vary. ≈12.5 cm (5”) long.

<table>
<thead>
<tr>
<th>Code</th>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>POP-200</td>
<td>Four</td>
<td>$3.25</td>
</tr>
</tbody>
</table>

Choositz Decision Balls
These are the largest “Happy-Sad” balls we have seen! These two black rubber balls appear identical, but have extremely different physical properties. Dropped onto a hard surface, one ball bounces while the other hits the surface and stops immediately. An effective reminder to students that some properties cannot be observed without experimentation. Includes two 3.8 cm (1.5”) dia. balls.

<table>
<thead>
<tr>
<th>Code</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>SS-3</td>
<td>Set of two $7.75</td>
</tr>
</tbody>
</table>

Extra Large (1.5” diameter) Happy/Sad Balls
One bounces, the other does not!

Check out our energy workshop video: www.teachersource.com/category/blastoff
Energy

Wooden Car Kit

This wooden car is powered by an elastic band. When the potential energy of the stretched elastic is converted into kinetic energy of motion, the car will travel about three meters (≈10 feet). Students can experiment by varying the method of winding the elastic, the number of turns, and the type of surface used. Easy to assemble.

Test your wooden car with yet another variable! The washers enable your students to tackle “weightier” experiments. Pack of eight. Alternately, provide your students with four wheels and ask them to construct a wooden car using scrap wood.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>WK-1</td>
<td>Wooden Car Kit</td>
<td>$8.95</td>
</tr>
<tr>
<td>WK-105</td>
<td>Six or more kits</td>
<td>$8.25 each</td>
</tr>
<tr>
<td>WK-2</td>
<td>Eight Washers</td>
<td>$1.95</td>
</tr>
<tr>
<td>WK-3</td>
<td>12 Wheels (2&quot; dia., 0.75&quot; thick, 0.375&quot; hole)</td>
<td>$7.95</td>
</tr>
<tr>
<td></td>
<td>12 Wheels (1.25&quot; dia., 0.5&quot; thick, 0.25&quot; hole)</td>
<td>$5.95</td>
</tr>
</tbody>
</table>

OneCar

OneCar is a comprehensive, open-ended STEM system that allows students to explore energy and motion in as many ways as they can imagine—without soldering! Every kit includes eight OneCars. Each has a low-friction car chassis, four wheels, and ample components that can be assembled and de-constructed for multiple use. Students can design, build, test, and propel their cars in six different modes, using a solar panel, electric motor, capacitor, kitchen chemicals, compressed air, propeller and more. Your students will be in the engineering fast lane as they learn about simple machines, Newton’s Laws, electrical circuits, renewable energy, chemical reactions, energy conversion and more! Sold as an eight-pack with ample Teacher’s Notes. Additional instruction downloads available online. Batteries not included.

PHY-280 | $129.00

Mousetrap Car Kits

We designed our classic Mousetrap Racer kit for students ready to try the construction and operation of their first mousetrap race car (recommended for 4th grade and up). Our robust design features die-cut parts from Micro-lite Plywood for lasting durability and detailed instructions for each student. Our Class Packs include enough materials to build 12 mousetrap racers. See our website for the full materials list.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MID-150</td>
<td>Class Pack of 12</td>
<td>$112.95</td>
</tr>
</tbody>
</table>

The Amazing Flywheel Powered ZeCar

Perfect examples of the wheel and axle in action. Each beautifully constructed car consists of a brightly colored stainless steel flywheel connected to a pair of wheels through a series of gears. A gentle push spins the flywheel and supplies the ZeCar with the energy it needs to move and even climb gentle inclines. Colors may vary.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>KRW-3</td>
<td>Pair of Pull-Back Cars</td>
<td>$6.95</td>
</tr>
</tbody>
</table>

Pull-Back Cars

So many interesting physics concepts can be taught using these two pull-back cars, one with high torque (low gear) and the other with low torque (high gear). When pulled back the same amount and then released both cars travel approximately the same distance, but one gets there in a hurry, while the other takes its time. ≈5 cm (2") long. Colors may vary.

Find lesson ideas and product videos at www.TeacherSource.com
Multi Project Solar Kit
Mini solar building kits teach students the benefits of solar energy while they create a fun toy that requires no batteries. An excellent beginner building kit designed to show how solar power can be used to drive a small motor for any of six different devices: an air boat, windmill, robotic puppy, moving car, a stationary plane, or a revolving plane.

Works outside in sunlight or inside with a high intensity lamp! This kit includes a solar cell, motor, and 21 snap-together parts. No experience or tools required. For ages 10+.

ROB-550 $19.95

14-in-1 Educational Solar Robot
Use solar powered technology to mix and match parts to make 14 unique solar robots. Engineer moving, rolling, and swimming robots. Robots can be used on both land and water. Make a companion dog-bot, a crawling turtle-bot, a scurrying beetle-bot, a wheel bot, boat bot, and more! Extremely detailed instructions with 190 mix-and-match parts. For ages 8+. Parental assistance might be needed depending on skill level.

ROB-575 $35.95

Dodeca 12-in-1 Solar-Hydraulic Kit
This unique kit will teach your students how to engineer 12 different robots that use both solar and hydraulic power in harmony. Students will actively learn about two key types of alternative energy while they use their imaginations to create four different vehicles (Dune Buggy, Obstacle Avoiding Rover, Excavator, and Forklift) and eight different animals (Elephant, Pterosaurs, Monkey, Ostrich, T-Rex, Crocodile, Scorpion, and Dog-Walker). Building these 12 exciting robots encourages manual dexterity, problem solving, and self-confidence. Kit includes instructions, 231 pieces. No batteries required! For ages 8+. Robot sizes range from Obstacle Avoiding Rover: 4.37” x 3.66” x 4.25” to Pterosaurs: 8.97” x 9.01” x 10.15”

ROB-590 $33.95

Salt Water Car Kit
This environmentally and kid-friendly vehicle reflects the new, cleaner ways we think about automobile use and demonstrates a more effective use of our natural resources. As salt water reacts with the magnesium metal sheet (three sheets included) in the fuel cell module, the car can operate for five to seven hours continuously. Just take out the fuel cell module, rinse with tap water, and dry it to park. Refill includes five magnesium sheets, one air cathode, and one piece of non-woven fabric.

ROB-560 Salt Water Car Kit $15.95
ROB-562 Refill $4.95
Electricity: Green Energy

The PowerWheel

The PowerWheel is a micro hydro generator—an amazing tool for teaching lessons on energy, hydro-power, and other renewable sources of energy. The unit easily connects to a classroom faucet or outside hose. Imagine charging a cell phone or laptop computer from the power of your faucet! The PowerWheel can be used to enhance lessons for students from kindergarten through 12th grade.

The Basic PowerWheel Bundle includes a fully-assembled PowerWheel, LED light strip, bridge rectifier, all the wiring to convert the AC output to DC (for powering battery powered devices), and a user’s manual with educational mini-lessons and suggestions for use.

The PowerWheel Incandescent Light shows the difference in efficiency between the included LED lights and this two-bulb incandescent light. Includes two spare bulbs. The Electronic Tone Alert turns the electrical energy from your Power Wheel into sonic energy instantly! The Peltier Thermoelectric Cooler/Heater converts electrical energy directly into a temperature difference, or vice-versa. When 12 volts are applied to the leads, one side of the unit will become hot, the other cold.

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRN-200</td>
<td>Basic PowerWheel Bundle</td>
<td>$179.95</td>
</tr>
<tr>
<td>GRN-210</td>
<td>PowerWheel Incandescent Light</td>
<td>$14.95</td>
</tr>
<tr>
<td>GRN-215</td>
<td>Electronic Tone Alert</td>
<td>$3.95</td>
</tr>
<tr>
<td>GRN-220</td>
<td>Peltier Thermoelectric Cooler/Heater</td>
<td>$9.95</td>
</tr>
<tr>
<td>GRN-225</td>
<td>Set of Tone Alert and Peltier</td>
<td>$11.95</td>
</tr>
</tbody>
</table>

Great for science & technology lessons for students ages 10+!

Power House

Build the Power House and then conduct 100 experiments in and around the house. Learn about energy-efficient construction materials and passive house design. Experiment with heating, cooling, conduction, convection, and insulation. Investigate Earth’s climate, the water cycle, and that inexhaustible power plant in the sky: the Sun. Test passive solar collection methods with a solar collector. Hook up a photovoltaic solar panel to generate electricity from sunlight. Build wind turbines to extract energy from the wind. Construct a greenhouse and learn about the energy conservation tricks used by plants.

EXP-110 $99.95

Robotikits

These mini solar kits are easy to assemble and demonstrate alternative energy principles. Running on sunlight, they require no batteries. Small screwdriver and little or no experience required. For ages 10+.

The Super Solar Racing Car has surprising speed. It can be stopped quickly by shielding its power source. Eleven parts snap together. 5.5 x 4 x 1.5 cm (2.125" x 1.625" x 0.5")

In sunlight, the Frightened Grasshopper’s eyes jiggle, legs wiggle, and antennas sway to-and-fro as the frightened grasshopper dances. Seven parts snap together. 5 x 2.5 x 1.5 cm (2" x 1" x 0.5") plus antennae.

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROB-500</td>
<td>The Super Solar Racing Car</td>
<td>$10.95</td>
</tr>
<tr>
<td>ROB-510</td>
<td>The Frightened Grasshopper</td>
<td>$10.95</td>
</tr>
</tbody>
</table>
Electricity: Green Energy

Solar Rover
Build and customize your battery-free Solar Rover, place it in the sun and watch it zip along! The reflectors and solar panel turn sunlight into the energy that runs the motor. Can be built with or without a soda can body. For ages 8+.

GRN-415  $16.95

Solar Robot
Make a green-powered, simple machine with visible gears, levers, motor, and a solar panel. Students can recycle cardboard or other everyday materials to customize their Solar Robot. Runs on solar energy or direct indoor light source. No batteries required. For ages 8+.

GRN-410  $16.95

Windmill Generator
Watch the LED glow as it is powered by energy from the wind! No batteries required.

GRN-100  $11.95

Dynamo Torch
Convert a small motor into a generator, which can be used to power a light bulb. No batteries required.

GRN-110  $10.95

Tin Can Robot
Turn a metal can into a walking, wobbling, bug-eyed robot. Uses one AA battery (not included).

GRN-120  $12.95

Green Science Kits
Set of all three Green Science Kits above. All require recycled bottles or cans and a screwdriver. Ages 8+.

GRN-145  All three kits (GRN-100/110/120)  $32.95

Solar Cells
Use these solar cells to power small motors or other electrical devices that draw current. Each of these encapsulated solar cells will produce 400 ma at 0.9 volts. They can be used individually or connected in a series for more voltage or in parallel for more current. ≈6.5 x 9.5 cm (2.5” x 3.75”).

SLR-600  Solar Cell
Six or more  $9.95 each

GRN-100  $11.95

GRN-110  $10.95

GRN-120  $12.95

GRN-145  All three kits (GRN-100/110/120)  $32.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
World’s Simplest Motor™

This easily assembled motor is able to run for more than five hours on a simple flashlight battery. Recommended for ages 8+. Uses one D-cell battery (not included). Colors may vary.

With the replacement wires, you can buy a class set of our World’s Simplest Motors and have students wind their own armatures year after year. The wire is the same used in the original kit (SS-11).

SS-11  World’s Simplest Motor  $4.95
11 or more  $4.45 each
SS-11A Five Replacement Wires  $4.95

Transparent Alternator Kit

How is power made? The Transparent Alternator Kit (TAK) gives your students a chance to discover the answer to this question in an unforgettable way. In less than 20 minutes, students can create a simple device that will not only allow them to produce the energy to light up an LED…but help them understand how it happens. What a marvelous introduction to mankind’s greatest discovery, electricity! This simple device truly demonstrates the foundation of all technology. The discoveries continue as students explore what they can power with their copper wire and magnet alternator. With modifications, they’ll produce enough electricity to charge a cell phone! The alternator can be unwound, disassembled, and rebuilt over and over again.

OHM-150  Transparent Alternator Kit  $19.95
OHM-155  Replacement Wire Coil  $6.00
OHM-160  Class Set of 10 Kits  $179.95

Hand-Cranked Generator

This hand-held crank generator produces up to 12 volts of DC electricity. It can be connected to an external circuit or used independently as a flashlight with the included bulb. Housed in tough transparent plastic, all components can be easily observed. When compared with similar products costing more than twice as much, we overwhelmingly preferred this one for its simplicity and usability.

GEN-100  $14.95

Hand-Powered Flashlight

This hand-held “dynamo” clearly demonstrates how electrical energy can be produced by moving an electrical conductor through a magnetic field—a discovery made by Michael Faraday in 1831.

Has a built-in non-rechargeable, non-replaceable battery that can provide light for many hours, showing the efficiency of modern LED lighting technology. However, no batteries are ever required—and there’s no bulb to replace. A great safety item. Keep one in your car, next to your bed, or in your tool box and you will always have light when you need it!

SS-234  $12.95
**NEW! Thermoelectric Energy Demonstration Kit**

With just the warmth of your hand and the cold from a piece of ice, you can generate electricity—and even run a motor! Exposed to a temperature differential, the device in this kit can create electrical current. You can also use it in reverse—running a current through it will cause one side to become warm and other side to grow cold. A great high-tech demonstration of the Thermoelectric Effect!

**PHY-405**  $16.95

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**Light Bulb Experiment Kit**

Demonstrate the difference between parallel and series circuits in a vivid way students can easily understand. The **Light Bulb Experiment Kit** contains four Light Bulb Holders with Fahnestock Clips, four pairs of Jumper Wires with alligator clips, 10 Miniature Light Bulbs, eight D-Cell Battery Holders, and eight D batteries.

The versatile **Battery Holders** can be connected together in parallel or series circuits for many different experiments. D-Cell Battery Holders available individually or in a pack of four. AA battery holders available only as a pack of four. (Batteries not included.)

The miniature **Light Bulb Holder** is great for teaching about electricity, circuits, and voltage. Easily attach batteries and bulb using the Fahnestock Clips. Simply push on the tab and insert the wires, or use alligator clips. Miniature **Light Bulbs** sold separately.

The **Jumper Wires** with alligator clips are 30 cm (12") long. Five black and five red.

**OHM-300**  Light Bulb Experiment Kit  $22.95
**BAT-200**  Single D-Cell Battery Holder  $1.50
**BAT-204**  Four D-Cell Battery Holders  $4.95
**BAT-404**  Four AA Battery Holders  $3.95
**BLB-101**  Light Bulb Holder w/ Fahnestock clips  $0.75
**BLB-110**  10 Light Bulb Holders  $7.00
**BLB-300**  30 Light Bulb Holders  $19.95
**BULB-120**  10 1.5 volt bulbs  $6.95
**BULB-130**  10 3 volt bulbs  $6.95
**WIR-150**  10 Jumper Wires  $5.95

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**Electric Paint**

Create your own circuits without using wires! Our **Electric Paint** provides a great platform for discovering, playing, repairing, and designing electronics. Electric Paint can be used as both a liquid wire and a conductive adhesive. Using this handy tube allows you to draw circuits and attach small components to your projects. Works great on many materials including paper, plastic, textiles, and conventional electronics (but not skin!). Dries quickly at room temperature. Once dry, you can even overlap the paint and the two layers won’t interact, allowing you to overlap circuits! Washable and nontoxic. The **Electric Paint Circuit Kit** includes an Electric Paint tube (10 ml), five LEDs, and five CR2032 batteries.

**OHM-200**  Electric Paint Tube (10 ml)  $12.95
**OHM-205**  Electric Paint Circuit Kit  $19.95

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Call 203-74-TEACH (83224) or email info@TeacherSource.com
Use with our Plasma Globe (page 111) for an electrifying demonstration!

**Energy Tube**
Safely demonstrate open and closed series circuits without any danger of electric shocks! When the tube is “turned on,” the red, green, and blue lights flash and it makes a funny buzzing sound. Activating the tube is the fun part—just touch the metal ends with both hands. Your body forms the conducting material that bridges the gap between the two metal strips and closes the circuit! 7” x 1.5”

You can even use it with our Plasma Globe to light up different colored LED’s at different times. That really left me amazed. Each of the three LED’s lit up in sequence—first red, then green, and finally blue—because of the varying amounts of energy required to light up each color.

**OHM-350** $7.95

**Energy Ball**
The Energy Ball is all you need to safely introduce your students to electric energy. This is a fun way to demonstrate open and closed series circuits without any danger of electric shocks! When the ball is “turned on,” a red light flashes and a buzzer sounds. Activating the ball is the fun part—just touch the metal strips with your two index fingers. Your body forms the conducting material that bridges the gap between the two metal strips and closes the circuit!

**SS-30** Energy Ball $3.95
16 or more $3.50 each

**Water Alarm:**
Test different liquids to see what tone they produce.

**Snap Circuits Jr.**
This kit includes instructions for more than 100 projects, ranging from flying saucers to sound-activated switches and alarms that play music. Contains over 30 parts including a motor, photoresistors, and multiple switches, plus an illustrated manual with instructions for over 100 projects. Uses two AA batteries (not included). For ages 8+.

**OHM-130** $29.95

**Electronic Snap Circuits**
Snap together electronic blocks to build over 300 different electronic circuits. All of the components (diodes, capacitors, resistors, transistors, etc.) are mounted with snaps that can be easily connected and disconnected. No soldering! No wire twisting! Learn by snapping together components to build:

- Light Bulb Circuits
- Fire Engine Siren
- Musical Door Bell
- Water Detector
- Electronic Fan
- Radio

**OHM-125** $61.95

Find lesson ideas and product videos at [www.TeacherSource.com](http://www.TeacherSource.com)
NEW! Crazy Circuits

Crazy Circuits are a creative, budget-friendly way to teach electronics and much more. These Lego®-based modular electronics kits make learning about electronic circuitry as easy as building with plastic blocks! Can’t solder? No problem! All Crazy Circuit materials are designed to work with any conductive material and can be sewn, snapped, or stuck to many different surfaces. They work perfectly with conductive tapes for paper crafts, conductive threads for e-textile sewing, conductive inks and paints for artwork, or even plain old alligator clips or paper clips. Whether you’re looking for MakerSpace materials, open-ended STEM tools, or just something fun to do, Crazy Circuits brings it all together. See our website for more details.

OHM-500 Starter Pack (22 pieces) $49.95
OHM-505 Deluxe Kit (47 pieces) $199.95
OHM-510 Makerspace Kit (228 pieces) $999.95
OHM-515 ¼ inch Nylon Conductive Tape (5 meters) $9.95

NEW! Squishy Circuits

Squishy Circuits Kits use conductive and insulating dough to teach the basics of electrical circuits, engineering, and much more. Includes projects and recipes that inspire creativity, independent thinking, and problem solving. A perfect blend of play and learning!

The Lite Kit contains pre-made conductive dough, 15 LEDs, and a battery holder, so you can make a simple light-up circuit. The Standard Kit has a Piezoelectric buzzer, 25 LEDs, plus conductive and insulating dough. The Deluxe Kit is our most complete kit, with 55 different components (buzzer, motor, battery holder, switch, LEDs, and eight packs of dough). For groups of 10-30, we suggest the Group Kit, which does not come with dough. You can make your own conductive and insulating dough or purchase extras! See our website for more details.

OHM-165 Squishy Circuits Lite $14.95
OHM-170 Squishy Circuits Standard $34.95
OHM-175 Squishy Circuits Deluxe $74.95
OHM-180 Squishy Circuits Dough Kit (eight 7 oz jars) $19.95
OHM-185 Squishy Circuits Insulating Dough (7 oz) $7.50
OHM-185 Squishy Circuits Group Kit $274.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Electricity: Kits

**LightUp Kits**
These innovative kits allow kids to build their own real-world projects and wirelessly program them from a tablet. As they experiment, they're not only learning about science and engineering, they're also building confidence in their problem-solving abilities. Drag-and-drop code blocks and guided tutorials make it easy for young engineers and innovators to design exciting projects. Detailed instructions and sample ideas available online.

This is STEM at its best! It's a simple, three-step process:
- **Build:** snap together magnetic blocks to build your circuit.
- **Learn:** use the app to review your circuit and adjust any mistakes until the electricity flows.
- **Code:** connect your circuit with a tablet and program it to do anything you can imagine!

**Edison Kit:** It's easy to understand how electronics and technology work with these magnetic snap blocks. Create a light sensor, buzzer, Morse code beeper, and more. Includes rechargeable battery, red LED, buzzer, light sensor, momentary switch, 50K variable resistor, six wire blocks, and micro USB cable.

**Tesla Kit:** With the power of code, young engineers can dream up hundreds of projects. The only limit is their imagination. Build a burglar alarm, a jukebox, a sunrise-triggered alarm, and more. Includes rechargeable battery, microcontroller, buzzer, light sensor, momentary switch, 5K resistor, seven wire blocks, and micro USB cable.

**LightUp Kits**
- **OHM-400** Edison LightUp Kit $49.95
- **OHM-405** Tesla LightUp Kit $99.95

**NEW! E-Blox® Kits**
E-Blox® are not your ordinary building blocks. They can be used to build your creations AND bring them to life! E-Blox® use patented technology, which consists of tin-plated blocks (pARTS™ set) or copper pins and sockets (Circuit Builder™ set) that connect to a battery block, powering the electrical component blocks. The plated blocks used in our pARTS™ set allow you to seamlessly integrate electronic circuitry into your builds to illuminate them with no wires to bundle or hide. The voltage across these plated blocks is very low, so there is virtually no risk of electrical shock when you touch them. And our Circuit Builder™ set includes parts that enable interworking with our pARTS™ set so you can also add motors, speakers, and amplifiers to your builds to create sound effects and launch fans. The City follows the adventures of Seymour E. Blox and his organic submarine, Mimi, as they travel to an ancient city faster than the speed of sound under water. See our website for more details.

**NEW! E-Blox® Kits**
- **CST-200** E-Blox Circuit Builder 59 $19.95
- **CST-205** E-Blox pARTS Plus Set $44.95
- **CST-210** E-Blox Stories - The City $51.95

**E-Blox® are not your ordinary building blocks. They can be used to build your creations AND bring them to life! E-Blox® use patented technology, which consists of tin-plated blocks (pARTS™ set) or copper pins and sockets (Circuit Builder™ set) that connect to a battery block, powering the electrical component blocks. The plated blocks used in our pARTS™ set allow you to seamlessly integrate electronic circuitry into your builds to illuminate them with no wires to bundle or hide. The voltage across these plated blocks is very low, so there is virtually no risk of electrical shock when you touch them. And our Circuit Builder™ set includes parts that enable interworking with our pARTS™ set so you can also add motors, speakers, and amplifiers to your builds to create sound effects and launch fans. The City follows the adventures of Seymour E. Blox and his organic submarine, Mimi, as they travel to an ancient city faster than the speed of sound under water. See our website for more details.**
Electricity

Plasma Globe

A fun and safe way to demonstrate Tesla Coils! Inside this globe, a Tesla Coil ionizes gas molecules, creating a plasma. As free electrons return to the gas molecules, light is produced. When you touch the glass globe, your fingers act as a source or sink of electrons, producing a unique light pattern. Totally awesome! Our exclusive Plasma Globe Experiment Kit includes one fluorescent tube, 10 neon lamps, activity guide, and one diffraction slide.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLS-100</td>
<td>18 cm (7”) Globe</td>
<td>$39.95</td>
</tr>
<tr>
<td>PLS-150</td>
<td>7.6 cm (3”) Globe</td>
<td>$19.95</td>
</tr>
<tr>
<td>PLS-110</td>
<td>Plasma Globe Experiment Kit</td>
<td>$11.95</td>
</tr>
<tr>
<td>PLS-120</td>
<td>30 Extra Neon Lamps</td>
<td>$21.95</td>
</tr>
</tbody>
</table>

Oudin Coil with Safety Switch

This Oudin Coil is often mistakenly referred to as a hand-held Tesla Coil. The coil is self-contained in a heavy duty Bakelite case which forms a convenient handle. The spark is adjustable from 10,000-50,000 volts at frequencies of approximately ½ megahertz. The high frequency spark produced is about 1” long and can be used for a wide array of applications. The electrode is approximately 2” long and the instrument is furnished with an intensity adjusting knob. For 115 v, 50/60 Hz. An improved safety feature is the on/off momentary switch in the handle.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>HS-10</td>
<td>Oudin Coil w/Safety Switch</td>
<td>$249.95</td>
</tr>
<tr>
<td>HS-135</td>
<td>Replacement Tip for Oudin Coil</td>
<td>$39.95</td>
</tr>
</tbody>
</table>

HomoMotor Kit

Credited to Michael Faraday, the homopolar motor does not involve the polarity change of more complex motors. Includes instructions to make three different styles of motors: pinwheel, spiral, and butterfly. Students can build the motor, make it run, and then break it down to make a different one. They can even design and build their own variations. Regular Kit contains all materials (including batteries) for two motors. Class Kit contains all materials for 24 motors.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>KIT-700</td>
<td>HomoMotor Kit</td>
<td>$6.95</td>
</tr>
<tr>
<td>KIT-710</td>
<td>HomoMotor Class Kit</td>
<td>$49.95</td>
</tr>
</tbody>
</table>

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Create your own static electricity activity! All you need is some tinsel and a source of static electricity. Knot several strands of tinsel on both ends, grab a PVC pipe, a latex balloon, or a wiffle ball bat to charge your orb, and you’re ready to go! Each package comes with 1,000 strands, so one package will last for years!

**NEW! Static Snowstorm Kit**

Our Static Snowstorm Kit is a memorable hands-on science lesson AND a unique keepsake for your students! Fill each plastic globe with small Styrofoam pellets that react when the globe is statically charged. Perfect for demonstrating that like charges repel and unlike charges attract. Easy to assemble and impossible to forget! Includes six plastic globe ornaments with caps, plenty of Styrofoam pellets, and instructions.

**STC-160 $7.95**

**Static Electricity Electroscope**

We’re all familiar with the static charges that occur when we remove a wool sweater, but detecting and measuring static can be a bit tricky. Now you can visually demonstrate the presence of a static charge with this classic flask electroscope. Simply place the two aluminum ribbons onto the hook inside of the flask. If a static charge is nearby, the two ribbons will repel away from each other. The stronger the charge, the more the ribbons separate. Charged objects do not need to touch the flask at all. Includes glass flask, stopper, rod, aluminum ribbons, and activities.

**STC-200 $12.95**

**Static Tube Kit**

This 9" plastic tube is filled with small styrofoam pellets that jump back and forth when the tube is statically charged. The single kit includes different materials to test on the tube. Perfect for demonstrating that like charges repel and unlike charges attract. Comes with instructions and suggested activities. Class kit contains styrofoam pellets, 16 tubes and caps, instructions, and suggested activities. (You will need to supply your own test materials!)

**SS-7 Single Kit $7.95**

**SS-705 Class Kit of 16 $18.95**

**Static Spheres**

People tell us our Static Spheres are downright addictive. Imagine holding physical proof of the Laws of Motion and static electricity in the palm of your hand! You’ll be mesmerized as these tiny spheres roll, flip upside down, and form patterns—without ever touching! Our Static Spheres are amusing and educational. Perfect as a gift, party favor, or hands-on activity for your science lab. 5.5 cm (2.2") dia.

**STC-150 $3.50**

**Brite Star Tinsel**

Create your own static electricity activity! All you need is some tinsel and a source of static electricity. Knot several strands of Brite Star Tinsel on both ends, grab a PVC pipe, a latex balloon, or a wiffle ball bat to charge your orb, and you’re ready to go! Each package comes with 1,000 strands, so one package will last for years!

**VAN-260 $1.25**

**Styrofoam Pellets**

These pellets are extremely clean and smooth. Their insulating qualities make them perfect for all kinds of static electricity experiments. The pellets move so easily over each other, a container full pours nearly as easily as a liquid. They can even be used to model the physical differences between solids, liquids, and gases. ≈2 liters.

**STY-100 $9.95**
Electricity

Super-Large Eddy Current Tubes

As you drop neodymium magnets down these large diameter, thick-walled copper and aluminum tubes, you can watch them twist and turn as they slowly fall. Each tube kit listed below contains a thick-walled Eddy Current Tube and sample neodymium magnets. The length of the heavy-walled aluminum tube is calculated so that magnets take approximately the same amount of time to fall as the short copper tube (ED-100).

Using the copper and aluminum tubes together, you have an instant example of how a material’s conductivity affects the magnet’s drop time.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Material</th>
<th>Length</th>
<th>Fall Time</th>
<th>Magnets</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED-100</td>
<td>Copper</td>
<td>18 cm</td>
<td>4 sec.</td>
<td>two rings</td>
<td>$39.95</td>
</tr>
<tr>
<td>ED-125</td>
<td>Aluminum</td>
<td>36 cm</td>
<td>4 sec.</td>
<td>two rings</td>
<td>$29.95</td>
</tr>
<tr>
<td>ED-140</td>
<td>Copper</td>
<td>61 cm</td>
<td>18 sec.</td>
<td>one sphere</td>
<td>$99.95</td>
</tr>
</tbody>
</table>

Use with Magnetic Field Viewer Film (page 115) for an amazing effect!

Button Batteries

For a variety of small electronic devices.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Battery</th>
<th>#/Pack</th>
<th>Price/Pack</th>
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<tbody>
<tr>
<td>BAT-50</td>
<td>CR2032 Lithium</td>
<td>5</td>
<td>$10.95</td>
</tr>
<tr>
<td>BAT-55</td>
<td>L1154 Alkaline</td>
<td>10</td>
<td>$5.95</td>
</tr>
<tr>
<td>BAT-60</td>
<td>389 Silver Oxide</td>
<td>10</td>
<td>$10.95</td>
</tr>
<tr>
<td>BAT-65</td>
<td>S1154S Silver Cell</td>
<td>10</td>
<td>$10.95</td>
</tr>
<tr>
<td>BAT-70</td>
<td>CR2016 Lithium</td>
<td>5</td>
<td>$10.95</td>
</tr>
</tbody>
</table>

Heavy Duty Batteries

These low-cost, extra heavy duty carbon-zinc batteries are ideal for after-school programs, workshops, and general laboratory work where the battery is used for short periods of time. Sold only in packs or cases.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Battery</th>
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<td>BAT-40C</td>
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<td>$340.00</td>
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</tbody>
</table>

For Student Projects

Extra Heavy Duty

ED-100
ED-125
ED-140

Eddy Current Rods

Invert the apparatus and observe the magnets simultaneously sliding down three different rods! The velocity is inversely related to the conductivity of the materials: copper, aluminum, and rigid plastic. A recreation of an old, handmade apparatus found in a university physics storeroom, this is great for demonstrating Lenz’s Law! 21.6 x 28 x 1.9 cm (8.5” x 11” x 0.75”).

<table>
<thead>
<tr>
<th>Item #</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ED-187</td>
<td>$38.95</td>
</tr>
</tbody>
</table>

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Magnetism: Magnetic Fields & Ferrofluid

The Ferrofluid Adventure Science Kit
Demonstrate magnetic fields in an incredible way! The Ferrofluidic Adventure Science Kit contains everything necessary (including magnets and a 17-page instruction booklet) to conduct fascinating experiments with ferrofluid—the only known ferrous liquid. We’re sure this kit will totally amaze you and your students. Because ferrofluid can be quite messy if handled recklessly, we recommend this kit for hands-on use with students in middle school and older. Great demonstration for younger students.

FF-100 Ferrofluid Adventure Science Kit $89.95
FF-310 Bulk Fluid only (100 ml) $39.95
FF-350 Bulk Fluid only (1,000 ml) $220.00

Ferrofluid Display Cell
A fantastic way to demonstrate ferrofluid with students of any age. The sturdy 5.5" plastic display cell is completely sealed and resistant to breakage. Use the cell with any strong magnet to illustrate the incredible properties of this amazing liquid. Demonstrate lines of force or show how charged particles stream into a star. Produced cooperatively with Ferrofluidics Corporation.

FF-200 $39.95

Ferrofluid Bolt Kit
Our Ferrofluid Bolt Kit comes with everything you need to create the amazing field spikes seen here. Each kit includes a 50 ml bottle of ferrofluid, a special ferrous nut and bolt, and magnets. Can be used again and again.

FF-400 $43.95

Magnaprobe
The Magnaprobe is a highly sensitive probe for studying three-dimensional magnetic force fields. It is far more convenient and accurate than the traditional methods using compasses and iron filings. Shown with our best-selling Cow Magnet (page 118).

MAG-100 $9.95

Super Ferromagnetic Silicone Putty
This silicone bouncing putty responds to the presence of a magnetic field. Place a blob near or between two strong magnets and watch what happens. Especially good attraction with our neodymium magnets. Includes a magnet (style may vary).

PUT-200 91 g (≈1/5 lb) $14.95

Note: The Ferrofluid in the display cells is not the same as the bulk ferrofluid. Bulk ferrofluid cannot be used to make a display cell.

Find lesson ideas and product videos at www.TeacherSource.com
Magnetism: Magnetic Fields

Magnetic Field Viewing Cube
The Magnetic Field Viewing Cube is a striking new way for students to observe magnetic field lines—in 3D! Even students who have seen magnetic fields demonstrated on a two-dimensional plane will be fascinated. Save yourself the mess of loose iron filings with this sealed, transparent acrylic box. Simply shake the oil-filled cube, drop the cylindrical magnet (included) into the center compartment, and watch the iron filings respond to the magnet's presence. Durable enough to allow students to handle individually or use it with an overhead projector to share with a large group. Countless opportunities for experimenting with variables. Cube measures 3" x 3" x 3".

M-255 $42.95

Sealed Iron Filings
Iron filings in a sealed plastic case. See how iron filings react with magnets and show magnetic fields with no mess. 9.4 x 6.8 cm (3.7" x 2.7").

M-610 Case of Sealed Filings
11.99
100 or more $2.25 each

Iron Filings
Place a magnet under a piece of paper and shake the filings on top. The filings will reveal the magnetic field lines. Hint: Place your magnet in a plastic bag to avoid the mess of cleaning iron filings off your magnet. Each bottle contains one pound of filings.

M-600 One pound of Iron Filings
Six or more pounds $4.95 / lb

Magnetic Field Pattern Window
Whether placed on top of white paper or projected on the screen, these sealed particles of iron move in a fluid to show the field lines of magnets. Includes a sealed magnetic field window, pair of small ferrite block magnets, a pair of plastic cased bar magnets, and instructions. 22 x 12 x 0.9 cm (9" x 5" x 0.35").

M-617 $59.95

Magnetic Field Viewer Card
Use this amazing viewer card to convey the concept of magnetic poles. It shows exactly where and how many magnetic poles are on any small magnet. Great for identifying magnets!

M-555 Mag. Field Viewer Card
11 or more $2.50 each

Magnetic Field Viewer Film
This micro-encapsulated film enables students to view a static magnetic field, such as found around permanent magnets or DC electromagnets. Simply place the film directly on the surface of the magnetic material in question and instantly reveal a magnetic field of any shape or pattern. Highly flexible and quite durable.

M-565 1" x 36" Strip $10.95
M-560 12" x 12" Square $32.95
M-570 6" x 6" Square $10.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Magnetism: Magnets

NEW! Surprising Science for Kids: MAGNETS!
The ideal introduction to magnetism for children! Our exclusive kit includes everything your young scientist needs for hours of hands-on investigative learning. We think you’ll agree that our Surprising Science for Kids: MAGNETS bundle is an exceptional value. All the components are safe, colorful, and durable—not to mention irresistible! Perfect as a gift, a rainy day activity, or as part of a tabletop science station. Designed for ages 5-10. Comes with a full-color, 16-page activity book filled with fun experiments and helpful background information, plus:

- Two magnetic wands
- Six rainbow bar magnets
- 20 magnetic marbles
- A plastic soda bottle and cap
- Iron filings sealed in a sturdy plastic case
- 50 magnetic counting chips
- Floating Ring Magnets Set
- Assorted pipe cleaners

KIT-500 $29.95

Magnetic Wands
Each brightly-colored wand contains a permanent magnet molded into the end of a durable plastic handle. With these magnetic wands, there is less chance of students pinching their fingers. 7.5” long each. Style and colors may vary.

M-510 Magnetic Wand $1.75
20 or more $1.55 each
M-512 Case of 100 $135.00

Rainbow Bar Magnets
A great teaching aid to help students discover that opposite poles attract and like poles repel. These durable, pinch-resistant magnets are enclosed in plastic for easy clean up. Students can conduct an investigation to compare the different strengths or directions of pushes and pulls on the motion of an object.

M-670 Pkg of six $7.95
M-675 Pkg of 20 $19.95

Magnetic Marbles
These aren’t your ordinary marbles—they’re magnets! They attract and repel each other, making them interact in amazing ways. Everyone loves to play and learn with them! Great with our magnetic wands. 15 mm (0.6”) dia.

M-620 Pkg of 20 $5.95
M-625 Pkg of 400 $74.95

Magnetic Counting Chips
These colorful little transparent discs are not magnets, but have a thin metal band around the outside, making them attractive to magnets of all kinds. Counting chips are perfect for exploring the properties of magnetism. 100 chips per pkg.

M-630 100 chips $6.95
Magnetism: Magnets

Floating Ring Magnet Set
Defy gravity! This amazingly simple set is a great demonstration of magnetic fields—the colorful magnets float effortlessly above each other! It’s sure to have your students saying “Super! Wow! Neat!” One base, four rings per set.

M-780 Floating Ring Magnet Set (one base, four rings) $4.95

Naturally Magnetic Lodestone
(Magnetite)
Lodestone (Fe₃O₄) is a natural magnet that will attract objects such as staples, iron filings and needles. When suspended by a thread, it will align along a north-south axis, which is the principle of the compass. This is a naturally occurring item. Size and shape is dependent on availability and will vary. ≈2"

RM-432 $4.95

Micro Diamagnetic Levitation Kit
Float a small square of pyrolytic graphite above a set of magnets at room temperature! This fascinating form of graphite is one of the few materials that one can easily observe being repelled by a magnetic field. In fact, at room temperature, pyrolytic graphite has the greatest diamagnetic susceptibility of any known material. The demonstration is small (≈6 x 6 mm) but impressive! Instructions included.

M-950 $14.95

Magnetic Sand Timer
Instead of sand, the Magnetic Sand Timer is filled with black iron filings. Set the device on its stand and watch the metal grains arrange themselves into a beautiful, spiked sculpture. What’s the secret? A powerful rare earth magnet is hidden in the base. Each time you turn it over, a different pattern is formed as the ferrous material is drawn into the magnetic field. Not intended as a real time-keeping device; actual times will vary. ≈14 cm (5.5”) tall.

MAG-300 $7.95

Pyrolytic Graphite!
Shown with a U.S. nickel

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Magnetism: Magnets

**Ceramic Magnets**

You'll stick with these magnets!

These ceramic magnets are available as ring or bar magnets. The ring magnets fit perfectly over a standard pencil and are great for demonstrating magnetic repulsion. Use them to collect magnetite (black iron mineral) out of beach sand. Hint: Place your magnet in a plastic bag to avoid the mess of cleaning the magnetite off later. Fun, safe, and strong.

**Ceramic Bars 0.375" thick x 0.875" x 1.875"**

- **M-700** Pair of Ceramic Bars $2.25
- Six or more pairs $2.05 each

**Ceramic Rings 1.25" in diameter with a 0.375" hole**

- **M-710** 20 Ceramic Rings $9.95
- **M-715** 100 Ceramic Rings $44.95

**Cow Magnet**

This standard Alnico cow magnet is stronger than bar magnets of equal size. Cow magnets have a pole at each end and are perfect for a 3D demonstration of magnetic fields. Simply put the cow magnet into a test tube, then lower the test tube into a clear 16 oz soda bottle filled with mineral oil (or glycerin) and iron filings. Shake the bottle, and watch the iron filings line up all the way around the magnet!

- **M-400** $6.95

**Alnico Bar Magnets**

These strong magnets are painted red with a white dot to indicate the north pole. Supplied in pairs with keepers. 3.8 x 1 x 0.7 cm (1.5" x 0.38" x 0.25").

- **M-250** Pair $6.95

**Magnetic Holding Pegs**

Each of these colorful pegs has a powerful neodymium magnet in its tip capable of “tacking” up to 15 sheets of paper to any magnetic board. 16 pegs in assorted colors.

- **PEG-100** Set of 16 $10.75

**Buzzing Stunt Magnets**

When two magnets are attracted to each other, you know there’s likely to be a collision. Our Buzzing Stunt Magnets do something you may not expect—they scream! Toss these two unique magnets into the air, or lay them on a low friction surface about 15 cm apart. As they collide, they produce a high-pitched clattering sound. Some say it sounds like a cicada or high voltage sparking. We say it’s amazing! What makes the sound? Why does one magnet turn when the other is spun around? Critical thinking and problem solving ahead!

- **BUZ-100** Pair $3.95

**Aluminum, Nickel, Cobalt**

Super strong! Great for White Boards!

Why “cow” magnet? Farmers often place one of these magnets in a cow’s stomach to catch nails or small pieces of iron that the cow might ingest. This prevents damage to a cow’s stomach, or “Hardware Disease.”

**Best Selling Science**
Call 203-74-TEACH (83224) or email info@TeacherSource.com

Magnetism: Neodymium Magnets

Super Special:
25 Neodymium Ring Magnets

These super-strong, nickel-plated, rare earth magnets are great for projects. You won’t find a better deal on neodymium magnets anywhere—at least we haven’t yet. 17 mm OD, 10 mm ID, 3 mm thick. Not intended for children under 12 years.

M-187 25 Neodymium Ring Magnets $19.95

Challenge your students to make a compass using these magnets, a pencil, and some string.

Neodymium Magnets

Neodymium is one of the most powerful magnet materials in the world and has a high resistance to demagnetization. These magnets can be used for a variety of incredible experiments, such as removing the iron from fortified breakfast cereal, and attracting the magnetic ink in a dollar bill. These magnets are used in computer disk drives, motors, and loud speakers. Spherical magnets have a north/south orientation through their axis, allowing them to be strung into infinite chains. An incredible value!

- M-100 (large trapezoid) 0.75" x 1.3" x 0.47" thick $8.95
- M-150 (small disk) 0.5" dia. x 0.1" thick $2.95
- M-165 (large disk) 1" dia. x 0.25" thick $6.95
- M-180 (ring) 0.75" OD; 0.375" ID; 0.25" thick $3.95
- M-190 (large sphere) 0.75" dia. $8.95
- M-195 (extra-large cylinder) 0.875" dia. x 1" high $14.95

ED-175 Neodymium Experimenter’s Kit $42.95

Includes two M-180’s, one M-100, one M-195, one M-190, and one M-165

WARNINGS:
Choking Hazard - Keep neodymium magnets away from small children.
Magnets are harmful if swallowed. Can cause fatal injuries or infections if ingested.

Injury Hazard - Handle with extreme care to avoid injury and/or damage to the magnets. Fingers can be pinched between attracting magnets, and magnet can chip if allowed to “jump” at an attracting surface or object.

Not intended for children under 12 years.
## Science Fair: Supplies

<table>
<thead>
<tr>
<th>Item</th>
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<th>Price</th>
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<td>Safety Goggles</td>
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<td>Rocket Film Canisters</td>
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<tr>
<td>Reaction Plate Mixing Wells</td>
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<td>1-Liter Soda Bottles</td>
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<td>Neodymium Magnets</td>
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<td>Mini Inspector</td>
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<tr>
<td>Pocket LED Microscopes</td>
<td>124</td>
<td>from $12.95</td>
</tr>
</tbody>
</table>

Find lesson ideas and product videos at [www.TeacherSource.com](http://www.TeacherSource.com/category/newsletterlibrary)
Science Fair: Ideas

Looking for science fair ideas? Visit our website for more than 100 Super! Wow! Neat!® suggestions!

Is there a relationship between the number of fish in the aquarium and the growth of the plants?

AquaSprouts Garden
$169.95
page 10

What angle produces the greatest overall distance?

Articulating Stomp Rocket System
$25.95
page 67

How does the placement of the batteries in the circuit affect the brightness of the bulb?

Light Bulb Experiment Kit
$22.95
page 107

What is the relationship between a sunscreen’s SPF and the UV light it allows through?

Ultraviolet Detecting Beads
$6.95
page 73

What is the most effective method of powering a car?

OneCar
$129.00
page 102

Is there a relationship between the liquid’s temperature and the light stick’s brightness?

Chemical Light Sticks
$1.95
page 75

Which area of your school has the most bacteria?

Bacteria Growing Kit
$11.95
page 15

What is the relationship between the material used and the amount of electricity it conducts?

Energy Tube
$7.95
page 108

What is the relationship between the light stick’s brightness and the number of fish in the aquarium?

Is there a relationship between the number of fish in the aquarium and the growth of the plants?

AquaSprouts Garden
$169.95
page 10

Which area of your school has the most bacteria?

Bacteria Growing Kit
$11.95
page 15

What is the relationship between the material used and the amount of electricity it conducts?

Energy Tube
$7.95
page 108

At what angle does the bubble rise most quickly?

Speed of the Bubble Tube Set
$39.95
page 43

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Lab Equipment

Find lesson ideas and product videos at www.TeacherSource.com

Brock “Magiscope” Microscope

The Brock Magiscope is known for its ruggedness, simplicity, and versatility—perfect for science classroom use. With the fine adjustment ramp, it is even easier to focus. It has only one moving part, no batteries, and no breakable glass mirrors. This model, with its 5X eyepiece and 4X objective lens, gives 20X magnification. Height: ≈9.5”. Weight: ≈1.8 lb.

MIC-310 $178.95

Deluxe Brock Kit

Includes Magiscope, 5X and 10X Eyepieces, 4X, 10X and 40X Objectives, and Field Case. Color of field case may vary.

MIC-377 Deluxe Brock Kit $273.95
CASE-200 El Utility Field Case $19.95

Fresnel Lens

Traditionally used to focus the beam in lighthouse lamps, a Fresnel Lens replaces the curved surface of a conventional lens with a series of small, narrow concentric grooves on its surface. Compared to conventional, bulky lenses, our plastic Fresnel Lens is thinner, lighter, and flatter and captures more oblique light from the source. This Fresnel Lens is perfect for magnifying images. Used in conjunction with our book, Physics Demonstration Apparatus, you can easily build a device that will melt pennies in as little as 30 seconds! 10.25" x 7". ≈12” focal length.

LEN-500 $3.95
Lab Equipment: Magnification

Shinco Microscope

The Shinco Scope is designed for rugged student use. It has easy threaded focus, efficient prism illumination, and a locked-on eyepiece. Its 5X eyepiece and 6X objective give a total magnification of 30X. Includes a vinyl cover and a set of five common slides. Weight: 2.4 lb.

<table>
<thead>
<tr>
<th>MIC-500</th>
<th>Shinco Microscope</th>
<th>$86.95</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Six or more</td>
<td>$76.95 each</td>
</tr>
</tbody>
</table>

See our website for an extended list of our Shinco accessories!

Deluxe Shinco Kit

Includes microscope, 5X & 10X eyepieces, 6X, 10X, & 40X objectives, field case, vinyl cover, and a set of five common slides. Color of field case may vary.

| MIC-595 | Deluxe Shinco Kit | $189.95 |
| CASE-200 | EI Utility Field Case | $19.95 |

Accessory Lenses

Fit both Shinco and Brock microscopes.

| MIC-350 | 10X Eyepiece | $29.95 |
| MIC-360 | 10X Objective | $29.95 |
| MIC-370 | 40X Objective | $43.95 |

Plastic Magnifier 3X/6X

Sturdy, inexpensive, quality magnifier. Dual lens 11.3 cm (4.5”) long.

| LEN-325 | Plastic Magnifier | $1.00 |
|         | 20 or more         | $0.75 each |

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Lab Equipment: Magnification

The Private Eye Loupe

This high quality jeweler’s 5X magnifying loupe is used throughout The Private Eye book. These simple magnifying lenses can accommodate large and small hands alike!

<table>
<thead>
<tr>
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<th>Description</th>
<th>Price</th>
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<td>Private Eye Loupe</td>
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<td>10 or more</td>
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<tr>
<td>EYE-242</td>
<td>Box Set of 18 Loupes</td>
<td>$69.95</td>
</tr>
</tbody>
</table>

The Private Eye

by Kerry Ruef

Designed to develop higher order thinking skills, creativity, and scientific literacy across subjects, The Private Eye is based on a simple set of “tools” that produce “gifted” results. Uses everyday objects, a jeweler’s loupe, and simple questions. It builds communication, problem solving, and concentration skills. For K-16, The Private Eye develops “the interdisciplinary mind.” Includes hundreds of lesson plan ideas, 240 pages.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>EYE-200</td>
<td></td>
<td>$27.95</td>
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</tbody>
</table>

Mini Inspector with Smartphone Attachment

This easy-to-use, compact instrument magnifies items approximately 60 times for close-up examination. Built-in LED lamp illuminates for clear view and UV (black light) provides added versatility. Includes leatherette storage case. Uses three LR1130 button cell batteries (included). Fit this Mini Inspector to your smartphone with the special attachment so your samples can be viewed and photographed with the phone’s camera!

<table>
<thead>
<tr>
<th>Item #</th>
<th>Description</th>
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<tbody>
<tr>
<td>MIC-660</td>
<td>Mini Inspector</td>
<td>$12.95</td>
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<tr>
<td>BAT-60</td>
<td>Repl. Batteries pkg of 10</td>
<td>$10.95</td>
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</tbody>
</table>

Introductory Prepared Slide Set

Includes pollen grains, mammal hairs, mosquito mouth parts, fish scale, onion cells, lily stamen, etc.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Description</th>
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<tbody>
<tr>
<td>MIC-560</td>
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</table>

Pocket LED Hand-Held Microscopes

Powerful magnification with an extremely lightweight and portable design. These pocket microscopes features a built-in LED light that provides a bright, clear image and a rubberized eyepiece for comfortable viewing. They fit easily in your pocket so you can bring them with you anywhere. The MIC-620 features a built-in UV light, a key chain ring, and is bright orange to make it easy to find in the field or classroom!

<table>
<thead>
<tr>
<th>Item #</th>
<th>Description</th>
<th>Price</th>
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<tr>
<td>MIC-610</td>
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<td>MIC-615</td>
<td>60x-120x 1 AA (not included)</td>
<td>2.3&quot; x 1.2&quot; x 3.7&quot;</td>
</tr>
<tr>
<td>MIC-620</td>
<td>20x 3 G12 (included)</td>
<td>1.5&quot; x 0.9&quot; x 1.7&quot;</td>
</tr>
</tbody>
</table>

Find lesson ideas and product videos at www.TeacherSource.com
Lab Equipment

New size!

Soda or “Pop” Bottle Preforms and Caps

All plastic soda or “pop” bottles start as a small plastic tube called a Preform. When this Preform is heated and blown into a bottle shape, it is ready to be filled with your favorite carbonated beverage. Our preforms come with full-sized final threaded openings so they use standard plastic soda bottle tops (included). Use them for a problem-solving activity by seeing if your students can guess their use. All bottle caps may be used again and again. These preforms are air and water tight when sealed with a bottle top. Perfect for collecting or storing liquid samples. Preforms are ≈11 cm long x 2.5 cm in diameter (=4.3” x 1”). Interior volume of preform is ≈25 cc (=0.84 fl oz). The polymer in our baby soda bottle preforms is polyethylene terephthalate, commonly known as PET. This polymer has a monomer formula mass of C₁₀H₈O₄, a melting point of 260°C, and a specific heat of 1 kJ/(kg-K). It has a glass temperature of 70°-80°C, when it starts to soften. Our basic package contains 30 preforms and 30 bottle caps. Bottle caps sold separately as well. Cap colors may vary.

The Preform & Rack Kit contains six soda bottle preforms, caps with temper rings, and one preform rack. Note that preforms have a larger diameter than most test tubes and don’t fit easily into standard test tube racks. Our polypropylene rack fits perfectly, resists spills and stains, and incorporates built-in drying pegs. It has openings of 2.5 cm diameter on a top plate with hemispherical wells and drying pins. 24 x 7 x 9 cm (9.5” x 2.75” x 3.5”). Cap colors may vary.

SM-100A 30 Preforms w/Caps $18.95
SM-150 100 Caps only $9.95
TT-100 Preform Rack only $6.95
TT-200 Preform & Rack Kit $10.95

Petri Dishes

These high quality, economical plastic Petri dishes are perfect for classrooms or science fair projects. Grow bacteria, sprout seeds, hold small items for viewing, observe life in pond water, etc. The sterile plastic dishes have a consistently even surface and excellent optical clarity. They feature a triple-vented lid to help prevent condensation, and are easily stackable. Sold in packs of 20 dishes.

LSP-110 20 Large Petri Dishes (10 cm dia.) $6.95
LSP-120 20 Small Petri Dishes (5.5 cm dia.) $4.95
LSP-130 20 Mini Petri Dishes (3.5 cm dia.) $4.95

Demo Tank

This narrow tank is perfect for demonstrating float and sink, pouring gas from one container to another, and Gro-Beasts (page 56). Its narrow width minimizes the amount of water, while its clear sides maximize visibility. This tank was originally designed and produced by Ron Perkins in 1984 as part of the elementary science teaching program. 38 x 25.4 x 11.5 cm (15” x 10” x 4.5”) 10 L capacity.

TNK-200 $69.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Lab Equipment: Goggles & Glasses

All of our Safety Glasses and Goggles meet or exceed Z87 ANSI Standards. All lenses are polycarbonate which absorbs 99.9% UV A and B light. Only Safety Goggles give the impact and splash protection required for working with chemicals. Safety Glasses give good impact protection.

**Children’s Safety Goggles**

These chemical splash goggles feature anti-fog lenses, an adjustable strap, and are designed to fit over regular prescription glasses. They are comfortable and vented, but the lenses are not removable or replaceable. This type of chemical splash goggle is the standard in chemical education throughout the world.

<table>
<thead>
<tr>
<th>Code</th>
<th>Type</th>
<th>Description</th>
<th>12-50</th>
<th>51 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAFE-182</td>
<td>Children’s Goggles</td>
<td>$5.95</td>
<td>$4.95 each</td>
<td>$3.95 each</td>
</tr>
</tbody>
</table>

**Youth Safety Glasses**

Real safety glasses, priced so all students can have their own pair.

Perfectly sized for younger students, ensuring proper fit, and lighter weight for use in elementary/middle school grades. With clear lenses, these general purpose safety glasses are best for indoor applications that require impact protection. Scratch-resistant lenses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Type</th>
<th>Description</th>
<th>12-143</th>
<th>144 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAFE-152</td>
<td>Youth Glasses</td>
<td>$2.95</td>
<td>$2.45 each</td>
<td>$1.95 each</td>
</tr>
</tbody>
</table>

**Deluxe Crews Goggles**

Our Best Goggles!

Designed to fit over regular prescription glasses, these goggles have an excellent field of view, a unique ventilation system, and a clear, anti-fog lens which can be replaced if it becomes damaged or scratched. With an adjustable strap, these goggles provide comfort for longer periods of wear.

<table>
<thead>
<tr>
<th>Code</th>
<th>Type</th>
<th>Description</th>
<th>20 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAFE-100</td>
<td>Deluxe Goggles</td>
<td>$9.95</td>
<td>$8.95 each</td>
</tr>
</tbody>
</table>

**Deluxe Safety Glasses**

Our Best Glasses!

These Crews “Tomahawk” safety glasses offer superior comfort and impact protection. The black frame is fully adjustable both in length and angle, while the clear polycarbonate lenses have a scratch-resistant coating to keep your vision clear. Built-in side shields to provide an even greater level of impact protection.

<table>
<thead>
<tr>
<th>Code</th>
<th>Type</th>
<th>Description</th>
<th>12-143</th>
<th>144 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAFE-146</td>
<td>Deluxe Glasses</td>
<td>$6.75</td>
<td>$5.45 each</td>
<td>$4.25 each</td>
</tr>
</tbody>
</table>

**Standard Pyramex Goggles**

Best Choice on a Limited Budget

These economical splash goggles feature anti-fog lenses, an adjustable strap, and are designed to fit over regular prescription glasses. Lenses are not removable or replaceable. This type of splash goggle is the standard in chemical education throughout the world.

<table>
<thead>
<tr>
<th>Code</th>
<th>Type</th>
<th>Description</th>
<th>20-299</th>
<th>300 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAFE-125</td>
<td>Standard Goggles</td>
<td>$5.45</td>
<td>$4.25 each</td>
<td>$3.65 each</td>
</tr>
</tbody>
</table>

**Standard Adult Safety Glasses**

Best Choice on a Limited Budget

These Crews “Stratos” Safety Glasses offer good impact protection at an affordable price. The temples extend to provide a comfortable fit and the crystal clear polycarbonate lenses have built-in side shields for additional protection.

<table>
<thead>
<tr>
<th>Code</th>
<th>Type</th>
<th>Description</th>
<th>12-143</th>
<th>144 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAFE-157</td>
<td>Standard Glasses</td>
<td>$4.95</td>
<td>$3.75 each</td>
<td>$2.45 each</td>
</tr>
</tbody>
</table>

Find lesson ideas and product videos at www.TeacherSource.com
Lab Equipment

Nitrile Safety Gloves
100% Free of Latex and Powder

Our Nitrile gloves have superior puncture and chemical resistance. They have a textured finish, making it easy to pick up items. They are 3 mil. thick, comfortable to wear, and fit either hand. Colors may vary.

$7.95 / Box of 100 gloves  
(All one size per box)  
SAFE-600S Small  
SAFE-605M Medium  
SAFE-610L Large  
SAFE-615XL Extra Large

$73.95 / Case of 1,000 gloves  
(All one size per case)  
SAFE-650S Small  
SAFE-655M Medium  
SAFE-660L Large  
SAFE-665XL Extra Large

Plastic Beakers

Beakers are like books—you can never have too many! Our stackable, economical Plastic Beaker set is just right for nearly any scientific task that doesn’t require extreme heat. Five sturdy polypropylene beakers come in convenient sizes of 50 ml, 100 ml, 250 ml, 500 ml, and 1,000 ml. Best of all, they stack together to take up less storage. Graduated measurements are raised on the beakers so they won’t fade or wash off.

LSP-100 Set of five $9.95

Reaction Plate Mixing Wells

Ideal for mixing up small amounts of liquids, sprouting small seeds, or storing small items. Trays measure 13 x 9 cm (5" x 3.25") each. Lids are included.

LSP-150 12 Well Reaction Plate $2.50
LSP-155 24 Well Reaction Plate $2.50

Tie-Dyed Lab Coats
Super! Wow! Neat!®

These 100% cotton lab coats have a distinctive look that your students will remember for years. The colorful design is also fantastic for disguising the occasional spill.

LAB-105S Small $44.95
LAB-105M Medium $44.95
LAB-105L Large $44.95
LAB-105XL Extra Large $49.95
LAB-105XXL XX Large $49.95

Safety Posters

These whimsical safety posters are sure to make your students think twice before making unsafe choices in the lab. Designed by Loose in the Lab’s Bryce Hixson. Set of 10 full-color posters. 13" x 19" each. 100 pound glossy paper with aqueous coat.

SAFE-850 Set of 10 $29.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
**Lab Equipment: Balances & Scales**

### Spring Scales (Push/Pull)

Weigh a suspended object or measure the force of pushing or pulling an object. These color-coded, high-quality spring scales are calibrated in grams and in Newtons. (Warning: calibrated for use on Earth only!)

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
<th>Color</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP-700</td>
<td>250 g / 2.5 N</td>
<td>Blue</td>
<td>$9.95</td>
</tr>
<tr>
<td>SP-710</td>
<td>500 g / 5 N</td>
<td>Green</td>
<td>$9.95</td>
</tr>
<tr>
<td>SP-720</td>
<td>1000 g / 10 N</td>
<td>Beige</td>
<td>$9.95</td>
</tr>
<tr>
<td>SP-730</td>
<td>2000 g / 20 N</td>
<td>Red</td>
<td>$9.95</td>
</tr>
<tr>
<td>SP-740</td>
<td>3000 g / 30 N</td>
<td>White</td>
<td>$9.95</td>
</tr>
<tr>
<td>SP-750</td>
<td>5000 g / 50 N</td>
<td>Yellow</td>
<td>$9.95</td>
</tr>
<tr>
<td>SP-790</td>
<td>Complete Set of Six Scales</td>
<td>$55.95 / set</td>
<td></td>
</tr>
</tbody>
</table>

### Adam Dune Compact Balances

With overload protection to help prevent damage to internal components, a splash-proof keypad and battery operation, Dune delivers reliable readings in the classroom or in the field. Simple to use on/off, unit and tare positive push buttons provide trouble-free operation. Its low-profile design makes Dune easy to store between sessions. Pan size 14.5 cm (5.7”).

- Color-coded keys of the most frequently used buttons
- Solid ABS housing is durable for industrial uses
- Auto power-off
- Low-battery indicator
- High-contrast display is easily visible from a distance
- Operates with AC adapter (included) or AA batteries (not included)

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAL-730</td>
<td>DCT-201 200 g ± 0.1 g</td>
<td>$83.95</td>
</tr>
<tr>
<td>BAL-740</td>
<td>DCT-5000 5000 g ± 2 g</td>
<td>$83.95</td>
</tr>
</tbody>
</table>

### Adam CB Compact Scales

Unrivaled in capacity and readability among its peers, the Adam CB Compact Scale combines performance and value. Its solid ABS housing and stainless steel pan make the CB easy to clean, while its compact size facilitates effortless storage and transportation between classrooms. Built-in battery operation enables it to be used in any location, while auto power-off helps conserve battery life. Pan size 13 cm (5.1”).

- High-contrast display is easily visible from a distance
- Large, type 304 stainless steel pan allows swift cleaning
- Overload protection helps prevent damage to internal components
- Sealed keypad protects against dirt and spills
- Auto power-off to save energy

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAL-745</td>
<td>CB-501 500 g ± 0.1 g</td>
<td>$74.95</td>
</tr>
<tr>
<td>BAL-750</td>
<td>CB-1001 1000 g ± 0.1 g</td>
<td>$79.95</td>
</tr>
<tr>
<td>BAL-755</td>
<td>CB-5000 3000 g ± 1 g</td>
<td>$79.95</td>
</tr>
</tbody>
</table>

**Spring Scales**

Our spring scales are great for measuring force in Newtons anywhere in the universe. In addition, they are calibrated to measure the mass in grams of an object at rest on the surface of the Earth. Each has a zero adjustment. Clear plastic tubes allow students to see how the scale works.

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
<th>Color</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP-10</td>
<td>250 g / 2.5 N</td>
<td>Blue</td>
<td>$5.50</td>
</tr>
<tr>
<td>SP-20</td>
<td>500 g / 5 N</td>
<td>Green</td>
<td>$5.50</td>
</tr>
<tr>
<td>SP-30</td>
<td>1000 g / 10 N</td>
<td>Brown</td>
<td>$5.50</td>
</tr>
<tr>
<td>SP-40</td>
<td>2000 g / 20 N</td>
<td>Red</td>
<td>$5.50</td>
</tr>
<tr>
<td>SP-50</td>
<td>3000 g / 30 N</td>
<td>White</td>
<td>$5.50</td>
</tr>
<tr>
<td>SP-60</td>
<td>5000 g / 50 N</td>
<td>Yellow</td>
<td>$5.50</td>
</tr>
<tr>
<td>SP-100</td>
<td>Complete Set of Six Scales</td>
<td>$29.95</td>
<td></td>
</tr>
</tbody>
</table>

10 or more $4.45 each

Find lesson ideas and product videos at www.TeacherSource.com
Lab Equipment: Ohaus

**Triple Beam Balance**

(OHAUS 750-SO, TJ611)

Engineered with Ohaus precision and durability, it will last for years! It has a capacity of 610 grams with a ± 0.1 gram sensitivity. With the Attachment Weight Set, the capacity of this balance expands to 2,610 grams—almost 6 lb.

- **BAL-310** Triple Beam Balance (OHAUS 750-SO) $124.95
- **BAL-140** Basic Economy Balance (OHAUS TJ611) $119.95
- **BAL-315** Attachment Weight Set $52.95

**Compact™ Balance**

(OHAUS CS-200, CS-2000)

Make weighing objects simple and quick. Because weighing is so fast, ONE of these low-cost balances will easily replace six mechanical ones. Simple to use; it has a high capacity (2,000 grams ± 1 gram). Requires three AA batteries or AC adapter (included).

- **BAL-100** 2000 g ± 1 g $119.95
- **BAL-102** 200 g ± 0.1 g $119.95

For teachers requiring greater precision but less capacity, we recommend BAL-102.

**School Balance**

(OHAUS SB-1200)

This durable, inexpensive balance can withstand constant "hands-on" practice, and the 2,000 g capacity with a ± 0.5 g sensitivity makes it easy for students to weigh familiar objects such as paper clips, erasers, etc. Includes an eight piece set of weights (actually masses): one 1 g, two 2 g, one 5 g, one 10 g, two 20 g, and one 50 g in a case.

- **BAL-20** School Balance $46.95
- **BAL-22** Extra Set of Weights $21.95

**Adam Triple Beam Balance**

(TBB-6105)

Adam Equipment’s TBB is the sturdiest balance choice for the classroom, with strong metal housing, stainless steel weighing pan, and a larger body than other triple beam balances. The innovative tripod legs and integral weigh-below hook allow you to easily determine density and specific gravity. Pan size 15.2 cm (6").

- **BAL-760** TBB-6105 610 g ± 0.1 g $89.95

Call 203-74-TEACH (83224) or email info@TeacherSource.com
Lab Equipment

MyChron Student Timers
These timers are much easier to use than a traditional stopwatch yet just as accurate and precise. Reduce uncertainty due to student errors in timing. The timers measure to the hundredth of a second and come with a one year manufacturer warranty. Multi-packs include a clear storage box for easy, visible classroom management. ≈5 x 5 x 1.3 cm (2" x 2" x 0.5").

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIM-705</td>
<td>Single Timer</td>
<td>$7.95</td>
</tr>
<tr>
<td>TIM-700</td>
<td>Boxed Six Pack</td>
<td>$42.95</td>
</tr>
<tr>
<td>TIM-720</td>
<td>Boxed 12 Pack</td>
<td>$79.95</td>
</tr>
<tr>
<td>BAT-60</td>
<td>Repl. Batteries pkg of 10</td>
<td>$10.95</td>
</tr>
</tbody>
</table>

NEW! OHAUS Pen Meter (OHAUS ST10)
After more than a century of perfecting the art of measurement through our durable weighing products, OHAUS precision is now available in a line of pen meters that provide accurate measurement of pH, oxidation-reduction potential (ORP), conductivity, salinity, and total dissolved solids (TDS). Starter pen meters are the economical option when you are simply looking for meters that will provide accurate measurement without restriction. Starter pen meters provide what should be expected of a small, economical pen meter: simple, fast, straightforward, no-frills operation time and time again.

With durable ABS housing, a protective sensor cap, and automatic shutdown feature that preserves battery life, Starter pen meters can endure consistent use in rugged environments. Equipped with a wrist strap that helps prevent unintentional dropping, Starter pen meters are constructed with an IP67 waterproof design that can prevent water damage when dropped into liquid. Easily replaceable electrodes, automatic shut off feature after six minutes of non-use. Four 1.5V batteries (included). Working Environment: 50°F – 104°F, 85% RH, non-condensing (10°C – 40°C, 85% RH, non-condensing). 7.28" x 1.5" x 1.77" (185 mm x 38 mm x 45 mm)

IND-300 14 pH, +/- 1.1 pH $47.95

The silent timer—No annoying beeping in the classroom!

Metal Back Thermometer
Mercury free and safe for classroom use. Glass thermometer, metal back. 16.5 x 2.6 cm (6.5" x 1") -30° to 110°C (-20° to 230°F).

TEM-100 $1.50

Five or more $27.95 each

Infrared Thermometer
Simply point and press. These amazing thermometers measure the temperature of an object without ever touching it. No need for a heat capacity of thermometer calculation! The temperature is instantly shown on a digital display to a fraction of a degree in either Celsius or Fahrenheit.

IR thermometers are extremely safe and do not contain the hazardous glass, mercury, or alcohol found in regular thermometers. Because temperature is determined quickly and without direct contact, one thermometer can be shared by many students.

IR-100 Infrared Thermometer $32.95

Five or more $27.95 each

BAT-50 Repl. Batteries pkg of five $10.95
Gifts

Home Science Lab

Our Home Science Lab is a 1, 3, or 6-month subscription series bursting with unique hands-on materials for children ages 6-11. There is simply no substitute for the kind of sensory learning your young scientists will experience in each month’s box. And besides, what’s more fun than sitting around your kitchen table doing science with your kids?! Get the full scoop on our website!

Topics include:
- Slime, Seaweed & Polymer Blobs
- Caves, Crystals & Mineral Treasures
- Magnetic Field Fiesta
- The Chemistry of Magic
- Tabletop Fossil Safari
- Bernoulli’s Flight Basics

<table>
<thead>
<tr>
<th>Plan</th>
<th>Duration</th>
<th>Price</th>
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<tbody>
<tr>
<td>HSL-100</td>
<td>One month</td>
<td>$26.95</td>
</tr>
<tr>
<td>HSL-300</td>
<td>Three months</td>
<td>$74.85</td>
</tr>
<tr>
<td>HSL-600</td>
<td>Six months</td>
<td>$137.70</td>
</tr>
</tbody>
</table>

Climate Change Mug

Add hot water and observe as Florida and California disappear, and Central America becomes just a chain of islands! This mug reminds us of the consequences of climate change. Watch what happens when our polar icecaps melt and the oceans begin to rise. Microwave safe, hand wash only, 170 ml (8 oz).

<table>
<thead>
<tr>
<th>Mug Code</th>
<th>Mug Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUG-205</td>
<td>Climate Change Mug</td>
<td>$12.95</td>
</tr>
<tr>
<td>MUG-210</td>
<td>Set of six</td>
<td>$64.95</td>
</tr>
</tbody>
</table>

Heat Activated Constellation Mug

At first glance, this unassuming black mug seems decorated with a light dusting of stars. But when you pour in a hot liquid, over 10 constellations appear as if by magic! Enjoy your tea while you marvel at the colorful outlines of Cassiopeia, Perseus, Sagittarius, Hercules, Andromeda, Scorpio, Taurus, Ursa Major, Ursa Minor, Orion, and Castor & Pollux. Microwave safe, hand wash only. ≈350 mL (12 oz).

<table>
<thead>
<tr>
<th>Mug Code</th>
<th>Mug Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUG-195</td>
<td>Heat Activated Constellation Mug</td>
<td>$11.95</td>
</tr>
</tbody>
</table>

Disappearing Dinosaurs Mug

Dinosaurs once ruled the entire planet. Thanks to this clever mug, you can watch eons pass before your eyes over a cup of coffee. The mug shows a prehistoric landscape populated by fierce dinosaurs. But when you pour in a hot beverage, the dinosaurs transform into fossils in a museum exhibition. Microwave safe, hand wash only. ≈350 mL (12 oz).

<table>
<thead>
<tr>
<th>Mug Code</th>
<th>Mug Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUG-185</td>
<td>Disappearing Dinosaurs Mug</td>
<td>$12.95</td>
</tr>
</tbody>
</table>

Call 203-74-TEACH (83224) or email info@TeacherSource.com

Free shipping!
Gifts

Exit: Escape Room Kits

These unique games are a thrilling way to encourage critical thinking and collaboration among your students! Players must use their team spirit, creativity, and powers of deduction to crack codes, solve puzzles, collect objects, and earn their freedom bit by bit. Modeled after the increasingly popular “Escape Rooms” around the country, in which players join forces to solve a series of puzzles using clues, hints, and strategy to escape from a locked room. Ages 12+. 1-6 players. 1-2 hours. See our website for more details on each kit.

PUZ-400  Exit: The Abandoned Cabin  $14.95
PUZ-405  Exit: The Secret Lab  $14.95
PUZ-410  Exit: The Pharaoh’s Tomb  $14.95
PUZ-415  NEW! Exit: The Forbidden Castle  $14.95
PUZ-420  NEW! Exit: The Polar Station  $14.95
PUZ-425  NEW! Exit: The Forgotten Island  $14.95
PUZ-430  NEW! Exit: Dead Man on the Orient Express  $14.95
PUZ-435  NEW! Exit: The Sunken Treasure  $14.95

Heat Sensitive Pencils

These unique thermochromic pencils let you know that “you’re getting warmer” as you make your point. They actually change color with the heat from your hand! Excellent motivational prizes or a sure-fire way to guarantee your students won’t lose their pencils. 25 pencils in assorted colors.

MO-7  Pkg of 25  $11.95

Science Is Fun Buttons

These bright buttons will grab the attention of both teachers and students. An inexpensive and eye-catching way to deliver the message at your workshop. Available as text only or with artwork. Each button is ≈7.6 cm (3”) in diameter. For quantities of 500 or more, call for special pricing.

SF-500  Science Is Fun Button  $1.50 each
SF-510  Button with picture  $1.25
t  10-99  $0.90
t  100+

See our website for Gift Certificates! Available on paper or electronically.
Gifts

One Minute Mysteries: 65 Short Mysteries You Solve With Science!
Got a minute? Then we have a mystery for you! Not an ordinary mystery book, One Minute Mysteries: 65 Short Mysteries You Solve With Science! makes science fun. These short mysteries have a clever twist—you have to tap into your science wisdom to solve them. Each story, just one minute long, challenges your knowledge in Earth, space, life, physical, chemical, and general science. Exercise critical thinking skills with dozens of science mysteries (solutions included) that will keep you entertained—and eager to learn more! Written by a father/daughter team, this entertaining and educational book is great for kids, grown-ups, educators, and anyone who loves good mysteries, good science, or both! Paperback, 188 pages.

BK-435  $12.95

Invitations to Science Inquiry by Tik Liem
Dr. Tik L. Liem lives on in this amazing collection of more than 400 discrepant events to interest and motivate students in learning science. Each page contains a list of the materials needed, a sketch, a points-wise, questions to ask, and an explanation. Emphasis is placed on the use of simple, easily acquired materials. Many of the activities are counter-intuitive, challenging the students to develop new ways of thinking. For all grades, elementary-college. Paperback, 467 pages.

BK-375  $39.95

Caffeine Travel Mug
This 16 oz stainless steel travel mug is imprinted with the molecular structure of our favorite morning stimulant! This insulated mug will be a great conversation starter with your friends, students, and coworkers. Hand wash with warm water. Style may vary.

MUG-200  $12.95

Bill Nye Bobblehead
Beloved for his humor and knack for clever demonstrations, Bill Nye is sure to bring a smile to your students. This unique bobblehead is made exclusively for Educational Innovations (with a nod of approval from the Science Guy himself!) Use Bill to demonstrate frequency and period, or as humorous desk decor. 18 cm (7") tall.

BOB-201  $16.95

New Low Price!

Magnetic Sand Timer
Instead of sand, the Magnetic Sand Timer is filled with black iron filings. Set the device on its stand and watch the metal grains arrange themselves into a beautiful, spiked sculpture. What’s the secret? A powerful rare earth magnet is hidden in the base. Each time you turn it over, a different pattern is formed as the ferrous material is drawn into the magnetic field. Not intended as a real time-keeping device; actual times will vary. ≈14 cm (5.5") tall.

MAG-300  $7.95

One Minute Mysteries: 65 Short Mysteries You Solve With Science!

Invitations to Science Inquiry by Tik Liem

Caffeine Travel Mug

Call 203-74-TEACH (83224) or email info@TeacherSource.com
The structure of the caffeine molecule is printed in white on the beaker. When a dark-colored beverage is added, the molecule becomes visible. (400 mL).

**Caffeine Beaker Mug**

For your safety in handling hot solutions, we offer high-performance beakers of borosilicate glass—the same sturdy material used in Pyrex® and Kimax®. Our beakers provide long-term resistance to wear and chemical corrosion.

**Erlenmeyer Mug (500 mL)**

Cut down from Erlenmeyer flasks, these unique mugs are perfect for any beverage. As a bonus, because they are wider at the base than the mouth, they resist tipping. No more spills!

**Beaker Mugs**

Our Beaker Mugs are super for chemical demonstrations! Students can see liquids being poured from one container to another without the demonstrator’s hand getting in the way. The mugs also allow safer handling of hot and corrosive liquids.

For lesson ideas and product videos, visit [www.TeacherSource.com](http://www.TeacherSource.com).
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