



Physical Sciences

2025–2026 Product Catalog

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Helpful Icons



New product



Meets Americans with Disabilities Act requirements



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Applicable for remote learning



Defined as a medical device by the FDA

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Physical Sciences

Preparing today's students to be the innovators of tomorrow isn't always easy, but finding the right teaching tools can be. From basic lab supplies to state-of-the-art classroom technology, the Fisher Science Education team has everything you need to create a 21st century STEM learning environment.

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Explore custom kits to meet the unique demands of your classroom.

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- Lab furniture and equipment
- Lab supplies and consumables
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- STEM



Fertilizer is chock full of necessary plant nutrients, including nitrogen, phosphorus, and potassium. Synthetic fertilizers derive these nutrients from raw materials such as natural gas and ore.

Visit fisheredu.com/headlinediscoveries for more articles and information for your classroom.

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Products to Teach Science

Featured Supplier **OHAUS**

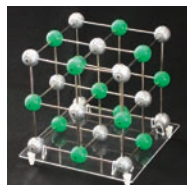


From Grade School
to Grad School,
OHAUS has the Products
to Meet Your STEM
Education Needs

Ingeniously Practical

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NEW Featured Products



Visualize 3D Structures of Crystals

Ball-and-spoke structural models of various crystal forms, perfect for visual learners.

Description	Cat. No.
United Scientific™ Sodium Chloride Crystal Model	S15848
United Scientific Diamond Crystal Model	S15806
United Scientific Graphite Crystal Model	S15690



Make Fossils Fun

Help students learn about fossils and evolution as they locate important features on photomicrographs. Includes a detailed lesson plan.

Description	Cat. No.
Supertek™ Microslide™ Fossils and Evolution	S00492



Demonstrate Newton's Law of Motion

Teach key physics principles with this classic Newton's cradle.

Description	Cat. No.
Supertek™ Newtonian Demonstrator	S01280



Explain Volcanology and Seismology Up Close

Visual representation of the planet's layers and plate movements with vibrant, hand-painted details.

Description	Cat. No.
Eisco™ Tectonics Model	S012319



Promote Exploration and Creativity

Introduce paleontology to young children with 12 beautiful picture cards and matching x-rays.

Description	Cat. No.
Roylco™ Discover Dinosaurs Picture Cards and X-Rays	S13230

Chemistry

General Chemistry

Co-lab-orate

An innovative digital lab notebook that enables students to work together no matter the distance.

Co-lab-orate is an innovative digital lab notebook that allows teachers to easily assign lab reports to their classes. The notebook lets students work individually or together to complete hands-on activities that are easy to access and grade.

Co-lab-orate is packed with features that make teaching and learning easy and collaborative!

- Enable students to work together, whether they are 6 feet or 6 streets apart
- Create new labs or import PDFs of labs you already have
- Easily deliver assignments to all students and classes
- Import photos and create and edit graphs, tables, and equations
- Access, complete, or grade hands-on lab activities using a mobile device, tablet, or laptop
- Communicate with other students and teachers through comments, or work independently
- Integrates with Google Classroom

Cat. No.	Description	Quantity	Unit of Measure
S75250	Digital Lab Notebook	1	Each

Ideal Gas Law Kit

Explore the gas laws through the reaction of sodium bicarbonate and hydrochloric acid. Students will perform the reaction and use the ideal gas law to calculate the amount of carbon dioxide produced, then use stoichiometry to determine their percent yield.

- Contains enough materials for 15 groups of students
- Teacher's manual and student study guide copymasters are included
- Disciplinary core ideas: PS1.A, PS1.B
- Performance expectations: MS-PS1-2, MS-PS1-4
- Cross cutting concepts: patterns, cause and effect engineering practices, analyzing and interpreting data, developing and using models
- Grade 7 to 14

COMPLIANCE: Aligned to the Next Generation Science Standards (NGSS)

Cat. No.	Description	Quantity	Unit of Measure
S18901	Ideal Gas Law Kit	1	Each



Equilibrium and Le Chatelier's Principle

Students will investigate Equilibrium and Le Chatelier's Principle through four different experiments.

- Students will apply various stresses to different chemical systems at equilibrium, then use their understanding of Le Chatelier's principle to explain their results
- Kit contains enough material for 15 groups
- Teacher's guide and student study guide copymasters are included
- Grade 7 to 14

COMPLIANCE: Aligned to the Next Generation Science Standards (NGSS)

Cat. No.	Description	Quantity	Unit of Measure
S280000	Equilibrium Kit	1	Each



Stoichiometry of Copper and Silver Nitrate

Introduce students to stoichiometry and mole ratios with the reaction of copper and silver nitrate!

- Students will watch as beautiful silver crystals are formed on the copper wire, then determine the moles of silver formed and moles of copper reacted to calculate the mole ratio
- Using this data, they will write the balanced chemical equation for the reaction, and determine the limiting reactant and their percent yield
- Kit contains enough materials for 15 groups of students
- Teacher's manual and student study guide copymasters are included
- Grade 7 to 14

COMPLIANCE: Aligned to the Next Generation Science Standards (NGSS)

Cat. No.	Description	Quantity	Unit of Measure
S280001	Stoichiometry Kit	1	Each



Elephant Toothpaste

A visually stimulating classroom demonstration. Innovating Science™ Elephant Toothpaste shows the effects of a catalyst on a chemical reaction.

- Discussion topics can include basic chemical reactions, phase changes and catalysts
- Grade 2 to 5

COMPLIANCE: Product SDSs

⚠️ ALERTS: CHOKING HAZARD - Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S42857	Elephant Toothpaste	1	Each



Physical Sciences Flip Chart and Multimedia Lessons

These multimedia kits can help students master key physical sciences concepts.

Flip Chart Sets Feature:

- Graphical instruction and write-on/wipe-off activities
- Flip chart set features 10 laminated, double-sided charts
- Side 1 features a graphic overview of the topic while Side 2 provides corresponding write-on/wipe-off activities for review and reinforcement
- Includes a teacher's guide with copymaster activities and review questions
- Spiral-bound and mounted on a sturdy easel for years of use, the flip chart sets are ideal for small group instruction, learning centers, independent use or classroom reference

Flip Chart Sets with Multimedia Lessons Also Include:

- One year access to a corresponding online multimedia lesson for a teacher and all their students that can be accessed anywhere, anytime, on any device – including Chromebooks, tablets, computers and mobile devices.
- Each lesson features animated, narrated tutorials; interactive exercises and activities; virtual lab investigations; illustrated, narrated glossary; visual resource library; and an inquiry-based student activity guide
- Developed under sponsorship of the National Institutes of Health (NIH), the lessons are perfect for individual student instruction on any computer as well as classroom presentation on any interactive whiteboard

Flip Chart Set Details:

- **All About Matter Flip Chart, Grades 3 to 5 (S13535) covers:** What is Matter?, Properties of Matter, Physical Properties, Measuring Mass & Volume, Density & Buoyancy, Temperature & Magnetism, States of Matter, Changes in Matter, Mixtures & Solutions, Vocabulary
- **Atoms & Chemical Bonding Flip Chart with Online Multimedia Lesson (S81127) covers:** Models of the Atom; Atomic Configuration & Bonding; Chemical Bonding; Ionic Bonding; Ionic Compounds; Covalent Bonding; Covalent Compounds; Naming Compounds; and Metallic Bonding
- **Elements & the Periodic Table Flip Chart with Online Multimedia Lesson (S81128) covers:** Introduction to Elements; Atomic Structure; Metals; Metalloids, Nonmetals; The Periodic Table; Groups on the Periodic Table; and Identifying Elements

Cat. No.	Description	Contains	Quantity	Unit of Measure
S13535	All About Matter	Flip Chart only	1	Each
S81127	Atoms & Chemical Bonding	Flip Chart with Online Multimedia Lesson	1	Each
S81128	Elements & the Periodic Table	Flip Chart with Online Multimedia Lesson	1	Each



Fluorescent Slime Using Polyvinyl Alcohol

Create your own fluorescent polymers.

Ideal for classroom demonstration.

- Mixture is pink under regular light
- Glows orange under a black light
- Easy to see and memorable for students
- Grade 7 to 14



Cat. No.	Description	Quantity	Unit of Measure
S06820	Fluorescent Slime Using Polyvinyl Alcohol Kit	1	Each

Edvotek™ Ion-Exchange Chromatography Kit

Learn the principles of ion-exchange chromatography.

Most biological molecules have a net charge within a pH range of 2 to 10. When the pH is altered, the net charge on molecules can change drastically.

- Learn the principles of ion-exchange chromatography by separating two charged molecules using a two-step salt gradient
- Proteins are absorbed onto a charged solid support ion-exchange column and subsequently separated during elution under conditions that influence their net charge



Cat. No.	Description	Quantity	Unit of Measure
S94617	Ion-Exchange Chromatography Kit	1	Each

Paper Chromatography Kit

Investigate the oldest documented technique used to separate chemical substances.

- Perform paper chromatography on three individual dyes and a mixture of dyes. Determine if all three dyes are in the mixture.
- See why different substances move at different rates within the chromatography system
- Includes materials for 15 groups
- Grade 7 to 14



Cat. No.	Description	Quantity	Unit of Measure
S96896*	Paper Chromatography Kit	1	Each



United Scientific™ Chromatography Strips

Used in chromatography studies.

- Available in size L x W: 15 x 2 cm
- Grade: 5+
- Class size: 10 lab groups



Cat. No.	Description	Quantity	Unit of Measure
S23973	Chromatography Strips	100	Pack

Thin Layer Chromatography Kit

See that commercial food colors contain more than meet the eye.

- Perform a highly effective separation procedure on four food colors
- Determine if there is more in each color than visual appearance would suggest
- Includes materials for 15 lab groups
- Grade 7 to 14



Cat. No.	Description	Quantity	Unit of Measure
S96897***	Thin Layer Chromatography Kit	1	Each

Kemtec™ Chemistry Kit: Characteristics of Matter

Explore various physical and chemical properties of matter.

- Students can observe chemical properties of five solutions by observing their reactions with other solutions, then determine names of two unknown solutions
- Ten experiments help students to explore various characteristics of matter: color, odor, solubility, shape, size, texture, density, alkalinity, acidity, states of matter, boiling point and melting point (graphing of melting and boiling points)
- Grades 5 to 9
- Class size: 24 students



⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S06736	Characteristics of Matter Kit	1	Each

Small Group Learning: Introduction To Chemical Equations

Students will perform a series of experiments highlighting the differences in chemical reactions, and use what they learn to write balanced chemical reaction equations.



Chemical reactions take place all around us. Being able to identify reactions and communicate what is happening is vital to the scientific community.

- The kit introduces two common types of chemical reactions; single replacement and double replacement.
- Contains enough materials for 5 groups
- Teacher's manual and student study guide copymasters are included
- Disciplinary core ideas: PS1.A; PS1.B
- Performance expectations: MS-PS1-2; MS-PS1-5; HS-PS1-1; HS-PS1-7
- Cross cutting concepts: patterns; energy and matter
- Engineering practices: developing and using models; analyzing and interpreting data
- Grade 7 to 14

COMPLIANCE: Aligned to the Next Generation Science Standards (NGSS)

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Cat. No.	Description	Quantity	Unit of Measure
S40726	Introduction to Chemical Equations	1	Each



Log in to your account on **fisheredu.com** to see your discounts.



Periodic Table – Nonmetals, Metals, and Metalloids



Students will learn about three different categories of elements – metals, nonmetals, and metalloids. They will examine the physical properties of several elements, test the chemical reactivity of each element, and classify each of the tested elements as either metal, nonmetal, or metalloid.

During the nineteenth century Russian chemist Dmitri Mendeleev began constructing a table of the elements. The work of Mendeleev allows us to understand that the periodic table of the elements is an organized classification of chemical elements based on certain properties of each element in relation to other elements.

- Kit contains enough material for 15 groups
- Teacher's manual and student study guide copymasters are included
- Disciplinary core ideas: PS1.A; PS1.B
- Performance expectations: MS-PS1-2; HS-PS1-1; HS-PS1-2
- Cross cutting concepts: patterns
- Engineering practices: analyzing and interpreting data; developing and using models
- Grade 7 to 14

COMPLIANCE: Aligned to the Next Generation Science Standards (NGSS)

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Cat. No.	Description	Quantity	Unit of Measure
S40759	Periodic Table Kit	1	Each

Polyurethane Foam Chemical Kit

Excellent demonstration of thermoplastic polymers.

Produce polyurethane foam with the condensation reaction of a polyisocyanurate and a hydroxyl-containing material (i.e., a polyol derived from propylene oxide).

- Mix two viscous liquids to initiate a reaction
- Lightweight foam expands to 30 times the original volume of the liquids
- After about 10 minutes, the foam hardens
- Grade 7 to 14

Notes: Perform in a fume hood and wear chemical splash goggles, apron and gloves as the chemical components are eye and skin irritants.



Cat. No.	Description	Quantity	Unit of Measure
S73009	Polyurethane Foam Chemical Kit	1	Each

Chromatography Paper

No. 1 paper can be used for one- and two-dimensional work.

- Smooth surface
- Thickness: 0.07 in. (0.18 mm)
- Medium flowrate
- Good resolution
- Suitable for general analytical separations



Cat. No.	Description	Dimensions (W x L)	Quantity	Unit of Measure
05-714	Sheet	18.1 x 22.4 in. (46 x 57 cm)	100	Pack
05-716-2B	Roll	1.5 in x 300 ft. (3.81 cm x 91.44 m)	11	Case
05-716-2A	Roll	0.78 in. x 328 ft. (2.0 cm x 100 m)	1	Each

Structure of an Atom 3D Model Making Kit



The Structure of an Atom 3D Model Making Kit allows students to make paper models of protons, neutrons, electrons, and electron shells to learn about the nuclear model of an atom.



- The nuclear model of the atom was developed after many years of theories and experiments
- Students will make paper models of protons, neutrons, electrons and electron shells
- The model covers the features of subatomic particles, electron energy levels, atomic number, mass number, ions and isotopes
- The Model Making Kit includes enough materials for students to assemble up to 5 paper models working cooperatively
- The comprehensive Teacher Resource Guide included provides illustrated readings, activities, key vocabulary and an assessment, along with teaching opportunities for students to Engage, Explore, Explain, Extend and Evaluate their understanding of the concepts presented
- Grades 6 to 10

Cat. No.	Description	Quantity	Unit of Measure
S436053	Structure of an Atom Kit	1	Each



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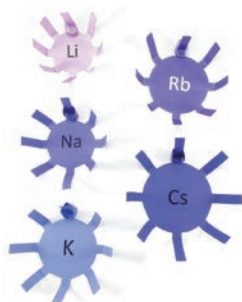
Keep informed and check out the latest edition at fisheredu.com/headlinediscoveries.

Group 1 Elements 3D Model Making Kit

NEW

This kit allows students to build models of atoms and electrons to see how alkali metals react and how bonds are formed.

- Group 1 of the Periodic Table contains the reactive alkali metals
- Students will use these easy to assemble models to learn how Group 1 elements react
- The differently colored electrons make it easy to see how the bonds are formed and the models shows reactions with water, oxygen, and chlorine
- Kit includes enough materials for students to assemble up to 5 paper models working cooperatively
- The comprehensive Teacher Resource Guide included provides illustrated readings, activities, key vocabulary and an assessment, along with teaching opportunities for students to Engage, Explore, Explain, Extend and Evaluate their understanding of the concepts presented
- Grades 6 to 10



Cat. No.	Description	Quantity	Unit of Measure
S436054	Group 1 Elements 3D Model Making Kit	1	Each

Generating Electricity 3D Model Making Kit

NEW

Use this kit to teach your students how electricity is generated.

- Teach your students how electricity is generated with our interactive model of a power station
- Students can observe how electricity is generated from non-renewable fossil fuels or renewable bio-fuels
- The models covers different types of fuel, the role of the boiler, what a steam turbine does, and how the generator produces electricity
- They can even turn the turbine!
- The model is a great starting point to consider different types of fuel and the pros and cons of generating electricity in different ways
- This kit includes enough materials for students to assemble up to 5 paper models working cooperatively
- The comprehensive Teacher Resource Guide included provides illustrated readings, activities, key vocabulary and an assessment, along with teaching opportunities for students
- Grades 6 to 10



Cat. No.	Description	Quantity	Unit of Measure
S436055	Generating Electricity 3D Model Making Kit	1	Each

Science Cube Kit – Molecular Model Set

NEW

Do you want to see what water looks like? How about carbon dioxide? The Molecular Model Set is an excellent way to visualize organic and inorganic compounds, and gain a better understanding of the actual structure of complex molecules.

- Perfect for group experiments
- Perfect for home schooling
- Save space when storing in reusable plastic snap box
- Ages 10+

Includes:

- 1 reusable plastic snap box
- 35 colored balls
- Connectors in various lengths
- 1 exploration guide



Cat. No.	Description	Quantity	Unit of Measure
S89520	Molecular Model Set	1	Each

Eisco™ Mole Set

Helps students develop greater understanding of mole, mass, molar mass, and properties of each element when they compare these four specimens side by side.

- Contains four element specimens: copper, iron, zinc, and aluminum
- Each sample contains one mole, 6.02×10^{23} atoms of the element

Dimensions:

- Copper: 45 x 12.7 x 12.7 mm
- Iron: 46 x 12.6 x 12.6 mm
- Zinc: 61 x 12.6 x 12.6 mm
- Aluminum: 65 x 12.6 x 12.6 mm



Cat. No.	Description	Quantity	Unit of Measure
S23760	Mole Set	1	Each

Eisco™ Student Basic Organic Chemistry Molecular Model Sets

Lets students visualize three-dimensional molecule structures and understand molecular formulas.

Hard plastic pails of different colors represent atoms; each has holes at correct angles to be connected with flexible plastic "bonds." Medium links represent single covalent bonds while long links can be used for double and triple covalent bonds.

- 12 gray metal (2 holes)
- 10 gray metal (3 holes)
- 10 gray metal (6 holes)
- 42 red oxygen (2 holes)
- 12 red oxygen (4 holes)
- 18 red oxygen (1 holes)
- 12 yellow sulfur (4 holes)
- 15 blue nitrogen (3 holes)
- 45 black carbon (4 holes)
- 12 purple phosphorus (4 holes)
- Six purple phosphorus (3 holes)
- 36 white hydrogen (1 hole)
- 170 medium gray links
- 100 long gray links



Cat. No.	Description	Quantity	Unit of Measure
S96541	Basic Organic Chemistry Molecular Model Set	1	Each

Inorganic/Organic Student Set

Teaching tool designed for school, college or self study (private) chemistry courses.

- Model for organic structures and inorganic molecules with empirical formula representations, such as carbon dioxide, ammonia, sulphuric acid, calcium hydroxide, metal salts, copper sulphate, alkanes, alcohols, glucose and benzene
- Used to represent any element having one sp³, one dsp³ and one d²sp³, in addition to existing element hybridizations done by three brown atoms
- Molecular model is easily assembled and reassembled
- Links are provided to make single, double, and triple bonds for OPEN, and short links for CLOSED models



Cat. No.	Description	Quantity	Unit of Measure
S07017	Inorganic/Organic Molecular Model Set	1	Each

Eisco™ Basic Organic Chemistry Molecular Model Set

Let students visualize three-dimensional molecule structures and understand molecular formulas.

- Hard plastic balls of different colors represent atoms
- Each has holes at correct angles to be connected with flexible plastic "bonds"
- Medium links represent single covalent bonds while long links can be used for double and triple covalent bonds

114-Piece Set (S96539) contains:

- 12 black carbon (4 holes)
- 20 white hydrogen (1 hole)
- 6 red oxygen (2 holes)
- 4 blue nitrogen (4 holes)
- 4 green halogen (1 hole)
- 2 yellow sulphur (6 holes; 1 hole)
- 1 purple phosphorus (4 holes)
- 1 gray metal (1 hole)
- 26 gray links (28 mm)
- 12 gray links (43 mm)
- 26 white links (28 mm)
- Assembly tool

54-Piece Set (S96538) contains:

- 14 white hydrogen (1 hole)
- 6 black carbon (4 holes)
- 2 blue nitrogen (4 holes)
- 6 red oxygen (2 holes)
- 2 green halogen (1 hole)
- 20 gray links (28 mm)
- 4 gray links (43 mm)

Cat. No.	Description	Quantity	Unit of Measure
S96538	54 pieces	1	Each
S96539	114 pieces	1	Each



Eisco™ Chemistry Molecular Model Sets

Lets students visualize three-dimensional molecule structures and understand molecular formulas.

95 Piece Organic and Inorganic Chemistry Set

- Hard plastic balls of different colors represent atoms; each has holes at correct angles to be connected with flexible plastic "bonds." Medium links represent single covalent bonds while long links can be used for double and triple covalent bonds.
- **Includes:** Six black carbon (4 holes), 14 white hydrogen (1 hole), Two blue nitrogen (4 holes), One blue nitrogen (5 holes), Six red oxygen (2 holes), Three yellow sulfur (one each: 2 holes, 4 holes, and 6 holes), One purple phosphorus (5 holes), Six green halogen (1 hole), Three gray metal (1 hole), Three gray metal (2 holes), Two gray metal (3 holes), One gray metal (4 holes), One brown sp³ (4 holes), One brown dsp³ (5 holes), One brown d²sp³ (6 holes), 28 mm gray links (20), 43 mm gray links (10), 28 mm purple links (5), Instruction manual



Cat. No.	Description	Quantity	Unit of Measure
S96540	95 piece set	1	Each

Eisco™ Chemistry Molecular Model Set

Consists of 54 balls of various colors and 24 links.

- Hard plastic storage case
- Standard size
- Interchangeable with other branded sets



Cat. No.	Includes	Description	Quantity	Unit of Measure
S24527	54 balls of various colors and 24 links	64 Pieces	1	Each
S24528	51 balls of various colors and 30 links	101 Pieces	1	Each

Inorganic and Organic Chemistry Molecular Model Kits



Create colorful, visible structures to gain a better understanding of chemistry!

Molecular Model Kit, 240 Pieces (S139056)

- Made of durable and colorful plastic, this kit provides many elements for creating over 40 organic and inorganic compounds that are excellent for visual display
- Double and triple bonds are easily made with flexible bonds
- Molecular geometry and bond angles can be visibly seen in the structure, making it great for studying
- Excellent molecular model kit for students studying chemistry in middle school or university
- Colored plastic spheres represent various atoms with holes at specific angles to accept plastic rods representing covalent and ionic bonds
- Set includes 84 plastic spheres and 153 plastic connectors
- Set includes a four compartment plastic storage box with a lid, disconnection tool and instruction manual
- Grades 6+



Molecular Model Kit, 125 Pieces (S139055)

- Build structural models of over 40 compounds
- Colored plastic spheres represent various atoms with holes at specific angles to accept plastic rods representing covalent and ionic bonds
- Set includes 53 plastic spheres and 70 plastic connectors
- Set includes a four compartment plastic storage box with a lid, disconnection tool and instruction manual
- Grades 6+

Cat. No.	Description	Quantity	Unit of Measure
S139056	240 Piece Kit	1	Each
S139055	125 Piece Kit	1	Each



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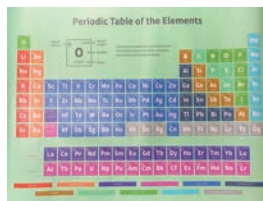


United Scientific™ Periodic Table Poster

Easy to read poster of the periodic table.

Large Periodic Table of the Elements

- Poster measures 47 in. wide and 35.5 in. tall – easily visible from every corner of the classroom
- Durable material will withstand heavy use
- Includes elements through Uuo #118

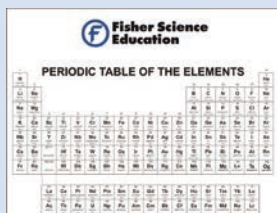


Cat. No.	Description	Quantity	Unit of Measure
S139459	Periodic Table Poster	1	Each

fisherbrand™ Periodic Table of the Elements

Personal-sized
periodic table
of the elements for the entire class.

- Quality print on standard white paper
- Each sheet is 8.5 x 11 in.
- 25 sheets per package
- Grade 6 to undergraduate

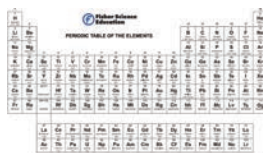


Cat. No.	Color	Quantity	Unit of Measure
S30781	Black, White, Blue	1	Each
S30782	Black, White	1	Each

Eisco™ Giant Periodic Table

Periodic table includes elements
Nihonium, Moscovium,
Tennessine, and Oganesson.

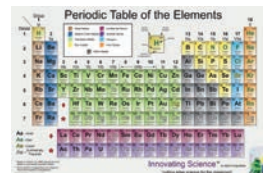
- This table shows the interval atomic mass for select elements.
- Symbol text is 1.125 in. high; text for names and molar masses is 0.375 in. high. Maximum useful viewing distance to read masses is 25 ft.
- Made of tri-fold corrugated plastic board
- Measures 8 x 4 ft.
- All elements are in bold, black lettering
- Includes grommets for easy hanging
- Grade 6 to undergraduate



Cat. No.	Description	Quantity	Unit of Measure
S71879	Giant Periodic Table	1	Each

Periodic Table Posters

Color printing helps students distinguish between metals, non-metals, and noble gas families as well as allowing them to differentiate types of metals, solids, liquids, and gases from synthetic elements.



Laminated Periodic Table (S99036A)

- Distinguish between metals, nonmetals and noble gas families
- Differentiate types of metals, solids, liquids and gases from synthetic elements
- Lists name, symbol, atomic number, weight, mass and electron configuration

Periodic Table Poster (S37730)

- Made from premium matte 100 lb. paper
- Includes name, symbol, atomic number, weight, mass, electron configuration of elements

Vinyl Periodic Table Poster (S20643)

- Includes name, symbol, atomic number, weight, mass, electron configuration

Large Periodic Table Poster (S41150)

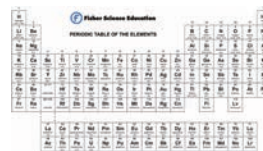
- Color printing helps your students distinguish between metals, non-metals, and noble gas families as well as allowing them to differentiate types of metals, solids, liquids and gases from synthetic elements
- Name, symbol, atomic number, weight, mass, electron configuration are included
- The periodic table poster is made of a durable, light weight, waterproof vinyl with grommets for hanging

Cat. No.	Description	Dimensions	Quantity	Unit of Measure
S99036A	Laminated Periodic Table	11 x 17 in. (27.9 x 43.2 cm)	1	Each
S37730	Periodic Table Poster	21 x 34 in. (53.3 x 86.3 cm)	1	Each
S20643	Vinyl Periodic Table Poster	35 x 45 in. (88.9 x 114.3 cm)	1	Each
S41150	Large Periodic Table Poster	4 x 8 ft. (1.21 x 2.43 m)	1	Each

Fisher Science Education™ Periodic Table of Elements Poster

Offers a large format and easy-to-use display.

- Printed on 10 mil indoor/outdoor poster stock material
- Corner grommets for easy display
- Large 48 x 84 in. display



Cat. No.	Description	Quantity	Unit of Measure
S07899	Large Format Periodic Table of Elements	1	Each

Periodic Table Pen

This pen holds a double-sided Periodic Table. The back side is a handy miniature reference chart.

- Convenient reference guide at your fingertips
- Pen holds a double-sided Periodic Table



Cat. No.	Description	Quantity	Unit of Measure
S05880	Periodic Table Pen	1	Each

Electrochemistry

Ohaus™ Aquasearcher™ Multi-Parameter Analyzer AB33M1

Easy-to-use and accurate, capable of measuring up to seven parameters including pH, ORP, conductivity, TDS, salinity, resistivity, and temperature.

- Features two independent measuring channels that can work simultaneously
- Equipped with a large 6.5 in. LCD display and a touch keypad
- Features a 1,000 item memory for measurements and calibration trail
- Provides connectivity and data output capabilities with RS232 and USB interface
- i-Steward monitors the condition of electrodes to ensure repeatable and consistent measurement accuracy
- Intuitive user interface makes changing the parameters, executing setup, and performing calibration as simple as using a smartphone

Includes: ST310 electrode, STCON3 probe, electrode holder, 4 pH buffer mini kits (50 mL), standard conductivity solution kits (1,413 µS/cm, 50 mL)



Cat. No.	Description	Quantity	Unit of Measure
S05298	AB33M1 Meter	1	Each

fisherbrand accumet™ Basic AB315 Benchtop pH/mV Meter

NEW

Ideal for daily pH testing of your routine laboratory samples, the accumet™ Basic AB315 Benchtop Meter provides essential functions needed for common pH measurements without complicated functions, all at a budget-friendly price.



- Large, backlit display simultaneously shows pH, mV and temperature readings
- One to five point pH calibration with automatic buffer recognition of four pH buffer sets
- One point relative mV calibration (RmV) for ORP measurements
- One point ATC temperature probe calibration
- Calibration due alarm, selectable 1 to 60 hr., or off
- Automatic or manual temperature compensation
- Ready icon indicates measurement stability
- Electrode condition icon indicates electrode status 500 data set storage with time/date stamp
- Non-volatile meter memory preserves settings and data in event of power loss
- Meter-attached stand facilitates easy electrode movement into and out of samples

CERTIFICATION: CE, TUV 3-1, FCC Class A, Without NIST-traceable Calibration Certificate

Cat. No.	Description	Includes	Quantity	Unit of Measure
13636AB315	pH/mV Meter with Electrode Stand	Electrode Stand, Power Adapter	1	Each
13636AB315A	pH/mV Meter with pH/ATC Epoxy-body Double Junction Gel-filled Electrode	pH/ATC Electrode, Electrode Stand, Power Adapter	1	Each
13636AB315B	pH/mV Meter with pH Glass-body Double Junction Refillable Electrode	pH Electrode, ATC Probe, Electrode Stand, Power Adapter	1	Each
AB315CERT	pH/mV Meter with Electrode Stand	Electrode Stand, Power Adapter	1	Each
AB315ACERT	pH/mV Meter with pH/ATC Epoxy-body Double Junction Gel-filled Electrode	pH/ATC Electrode, Electrode Stand, Power Adapter	1	Each
AB315BCERT	pH/mV Meter with pH Glass-body Double Junction Refillable Electrode	pH Electrode, ATC Probe, Electrode Stand, Power Adapter	1	Each

Thermo Scientific™ Orion Lab Star PH111 pH/mV Bench Meters



Measure pH or ORP with mV and temperature, feature a large backlit display for easy viewability, and offer small footprint to save bench space. The Orion Lab Star pH meter is ideal for simplified, budget-friendly lab testing and data recording.

Features

- Budget-friendly pH meter for simplified pH and ORP testing
- Display shows pH, mV and temperature simultaneously for accurate data recording
- Measure -2.000 to 18.000 pH, -2000.0 to +2000.0 mV and -5.0 to 105.0 °C or 23.0 to 221.0 °F to ensure comprehensive measurement capabilities
- Perform one to five point pH calibrations, one point ORP calibrations and one point temperature adjustment calibrations for proficient SOP compliance
- Large 5 inch backlit display makes viewing and recording measurements easy
- Small meter footprint saves valuable bench space in your lab
- Onscreen stabilizing and ready indicators help identify when readings are complete
- pH electrode condition icon helps ensure reliable electrode performance
- Date and time data stamped data and calibration logs support GLP compliance
- View active pH, ORP and temperature calibration logs with date and time stamp to ensure accurate, reproducible measurements
- Use 500-point data log with date and time stamp to record key measurements
- Output data and calibration logs to a printer or computer for long-term data storage

LSTAR1110 Orion Lab Star PH111 Bench pH/mV Meter with Stand (15-200-967)

- The pH meter and stand option, which allows you to purchase your pH electrode separately
- **Includes:** Meter with electrode stand, PC cable, universal power adapter

LSTAR1115 Orion Lab Star PH111 Bench pH/mV Meter Standard Kit (15-200-968)

- The standard pH meter kit option, for common pH samples such as drinking water, tap water, buffers (non-TRIS) and general purpose student use

- **Includes:** 9157BNMD refillable epoxy-body pH/ATC electrode, 916099 pH 4/7/10 buffer, storage and cleaning solution 60 mL kit meter with electrode stand, PC cable, universal power adapter

LSTAR1116 Orion Lab Star PH111 Bench pH/mV Meter Easy To Clean Bio Kit (15-200-969)

- The easy-to-clean bio pH meter kit option, for pH samples containing TRIS buffers, proteins, sulfides, halides or other components that can interfere with silver-chloride; included refillable pH electrode is easy-to-clean and restore
- **Includes:** GD9156BNWP double junction refillable epoxy-body pH electrode, 927007MD stainless steel ATC temperature probe, 916099 pH 4/7/10 buffer, storage and cleaning solution 60 mL kit meter with electrode stand, PC cable, universal power adapter

LSTAR1117 Orion Lab Star PH111 Bench pH/mV Meter Low-Maintenance Bio Kit (15-200-970)

- The low-maintenance bio pH meter kit option, for pH samples containing TRIS buffers, proteins, sulfides, halides or other components that can interfere with silver-chloride; included gel-filled pH electrode is low-maintenance and easy to operate
- **Includes:** GD9106BNWP double junction gel-filled epoxy-body pH electrode, 927007MD stainless steel ATC temperature probe, 916099 pH 4/7/10 buffer, storage and cleaning solution 60 mL kit meter with electrode stand, PC cable, universal power adapter

LSTAR1118 Orion Lab Star PH111 Bench pH/mV Meter Difficult Sample Kit (15-200-971)

- The difficult sample pH meter kit option, for pH samples that are thick, viscous or semi-solid including foods, beverages, wastewaters, emulsions, soils, slurries, suspended solids or sludges
- **Includes:** 9165 BNWP Sure-Flow refillable epoxy-body pH electrode, 927007MD stainless steel ATC temperature probe, 916099 pH 4/7/10 buffer, storage and cleaning solution 60 mL kit meter with electrode stand, PC cable, universal power adapter



Cat. No.	Description	Quantity	Unit of Measure
15-200-967	LSTAR1110 Orion Lab Star PH111 Bench pH/mV Meter with Stand	1	Each
15-200-968	LSTAR1115 Orion Lab Star PH111 Bench pH/mV Meter Standard Kit	1	Each
15-200-969	LSTAR1116 Orion Lab Star PH111 Bench pH/mV Meter Easy To Clean Bio Kit	1	Each
15-200-970	LSTAR1117 Orion Lab Star PH111 Bench pH/mV Meter Low-Maintenance Bio Kit	1	Each
15-200-971	LSTAR1118 Orion Lab Star PH111 Bench pH/mV Meter Difficult Sample Kit	1	Each

Ohaus™ Aquasearcher™ pH Meters

Advanced, research-grade benchtop pH meters with electrode, offering accurate, repeatable results.

Aquasearcher™ pH Meter AB41PH (01-922-366, 01-922-367)

- An advanced, research-grade benchtop pH meter with electrode, offering accurate, repeatable results with selectable resolution and an intelligent i-Steward system
- Equipped with a large 6.5 in. LCD display and a touch keypad
- Features a 1,000 item memory and password management for GLP documentation
- Provides connectivity and data output capabilities with RS232 and USB interface
- i-Steward ensures repeatable and consistent measurement accuracy
- Intuitive user interface makes changing the parameters, executing setup, and performing calibration as simple as using a smartphone

Aquasearcher™ pH Meter AB33PH (01-922-368, 01-922-369)

- A highly reliable and user-friendly pH benchtop meter with electrode (ST310) for standard laboratory applications
- Designed to measure pH and oxidation-reduction potential with temperature measurements
- Equipped with a large 6.5 in. LCD display and a touch keypad
- Features a 1,000 item memory for pH measurements and calibration trail
- Provides connectivity and data output capabilities with RS232 and USB interface

- i-Steward monitors the condition of electrodes to ensure repeatable and consistent measurement accuracy
- Intuitive user interface makes changing the parameters, executing setup, and performing calibration as simple as using a smartphone
- Auto endpoint mode and auto buffer recognition makes calibration easy

Aquasearcher™ pH Meter AB23PH (01-922-374, 01-922-375)

- A simple to use benchtop meter for measuring pH and oxidation-reduction potential (ORP)
- An intuitive design and auto-buffer recognition make measuring pH straightforward and easy
- Equipped with a large 5 in. LCD display and six instructional menu buttons
- Auto buffer recognition and 3-point calibration capability ensures a reliable calibration result
- Features a 99 item memory for measurements and last calibration



Cat. No.	Description	Includes	Quantity	Unit of Measure
01-922-366	AB41PH pH Meter	Meter, ST410 Electrode, STTEMP Probe, Electrode Holder, AS20 Magnetic Stirrer, 4 pH Buffer Mini Kits (50 mL)	1	Each
01-922-367	AB41PH pH Meter	Meter, Electrode Holder	1	Each
01-922-368	AB33PH pH Meter	Meter, ST310 Electrode, Electrode Holder, 4 pH Buffer Mini Kits (50 mL)	1	Each
01-922-369	AB33PH pH Meter	Meter, Electrode Holder	1	Each
01-922-374	AB23PH pH Meter	Meter, Electrode Holder, ST320 pH Electrode, 4 pH Buffer Mini Kits (50 mL)	1	Each
01-922-375	AB23PH pH Meter	Meter, Electrode Holder	1	Each

Ohaus™ Starter™ pH Meter

Affordable benchtop pH meter that clearly displays information with five distinctly marked keys, allowing users to operate with minimal training.

- Equipped with a large 3.5 in. LCD display
- Features a 99 item memory for measurements and last calibration
- Includes: ST2200 meter, electrode holder, ST320 electrode, 4 pH buffer mini kits (50 mL)
- Features auto-buffer recognition and auto-endpoint modes that make measurement and calibration simple

Cat. No.	Description	Quantity	Unit of Measure
S05306	ST2200 pH Meter	1	Each



Ohaus™ Aquasearcher™ Conductivity Meter AB33EC



Highly reliable benchtop meter designed to measure conductivity, total dissolved solids (TDS), salinity, and resistivity with temperature measurements.



- Selectable reading reference temperatures of 20 or 25°C with linear curve options and automatic temperature compensation
- Features auto-stop, auto temperature compensation, adjustable TDS factor, and 2- or 4- cell conductivity probe compatibility
- Equipped with a large 6.5 in. LCD display and a touch keypad
- Features a 1,000 item memory for measurements and calibration trail
- Provides connectivity and data output capabilities with RS232 and USB interface
- i-Steward monitors the condition of electrodes to ensure repeatable and consistent measurement accuracy
- Intuitive user interface makes changing the parameters, executing setup, and performing calibration as simple as using a smartphone
- **Includes:** Meter, Electrode Holder, STCON7 Probe, 4 Conductivity Standard Kits (84 $\mu\text{S}/\text{cm}$, 50 mL)

Cat. No.	Description	Quantity	Unit of Measure
01-922-372	AB33EC Conductivity Meter	1	Each

Ohaus™ Aquasearcher™ Conductivity Meter AB23EC



Simple to use benchtop meter designed to easily measure conductivity, total dissolved solids (TDS), and salinity.



- Equipped with a large 5 in. LCD display and six instructional menu buttons
- Features a 99 item memory for measurements and last calibration
- **Includes:** Meter, Electrode Holder, STCON3 Probe, 4 Conductivity Standard Kits (1413 $\mu\text{S}/\text{cm}$, 50 mL)

Cat. No.	Description	Quantity	Unit of Measure
S05304	AB23EC Conductivity Meter	1	Each

fisherbrand

FE150

Benchtop pH Meter 3-in-1

Set with

3-in-1 Single

Junction Gel pH/ATC Electrode, and Stand



Designed for convenient routine pH measurement. User-friendly features include an attachable electrode stand, efficient sample reading and recording, and flexible display options.

The essential functions needed for routine measurements

- Simultaneously displays both pH and temperature or mV-temperature
- One to five point pH calibration
- Automatic buffer recognition with selection of two pH buffer sets
- pH slope and offset display
- One point mV calibration
- One point ATC temperature probe calibration
- Automatic or manual temperature compensation
- Ready icon to indicate measurement stability
- Electrode condition icon to indicate status
- 100 data set storage with non-volatile memory

Cat. No.	Description	Quantity	Unit of Measure
S35925	FE150 Benchtop pH Meter 3-in-1 Set	1	Each

fisherbrand

FE150

Benchtop pH Meter

Education Set



Measures the acidity or alkalinity of a sample to a high degree of accuracy. Its intuitive, simple operation, easy-to-use interface and high accuracy measurements ensure maximum productivity in your classroom or lab.

Comes complete with pH meter, single junction gel pH electrode, ATC probe, and stand.

Cat. No.	Description	Quantity	Unit of Measure
S35923	FE150 Benchtop pH Meter Education Set	1	Each

fisherbrand**FE150****Benchtop pH Meter Bio Set with Double Junction****Gel pH Electrode, ATC Probe, and Stand**

Designed for convenient routine pH measurement. User-friendly features include an attachable electrode stand, efficient sample reading and recording, and flexible display options.

The essential functions needed for routine measurements

- Simultaneously displays both pH and temperature or mV-temperature
- One to five point pH calibration
- Automatic buffer recognition with selection of two pH buffer sets
- pH slope and offset display
- One point mV calibration
- One point ATC temperature probe calibration
- Automatic or manual temperature compensation
- Ready icon to indicate measurement stability
- Electrode condition icon to indicate status
- 100 data set storage with non-volatile memory

Cat. No.	Description	Quantity	Unit of Measure
S35924	FE150 Benchtop pH Meter Bio Set	1	Each

fisherbrand**pH Pen**

pH measurement is easier than ever with this economical pocket-size tester designed for on-the-go pH measurements.



Accurate and easy to use, these testers are ideal for quick pH measurements in hydroponic gardening, aquaculture, agriculture, pools, simple lab work and other water/wastewater applications.

- $\pm 0.1\%$ accuracy across full pH range
- Auto-buffer recognition and auto-calibration functions – quick, easy calibrations at the press of a button
- Long-lasting sensor – large volume of polymer gel reference gives longer sensor lifespan, while single Kynar™ reference junction prevents clogging
- Automatic temperature compensation and up to three calibration points for broadened accuracy throughout the pH range

Cat. No.	Description	Quantity	Unit of Measure
S35927	pH Pen	1	Each

Ohaus™ Starter pH Pen Meters

Convenient pH testing that offer a convenient way to measure pH, or the relative acidity or alkalinity of a sample at a given temperature. The pH pen meters can be completely operated with just one hand, freeing up your other hand to handle samples.



- Fast, straightforward results
- Durable IP67 waterproof design
- Equipped with wrist strap for security
- Automatic shutdown after six minutes of non-use
- Requires four AG13 1.5V micro alkaline batteries
- Size/weight: 185 x 45 x 38 mm, 110 g
- Includes buffer powder pack (ST20)

Cat. No.	Accuracy (pH)	Range (pH)	Quantity	Unit of Measure
S05084	± 0.1	0 to 14	1	Each
S05085	± 0.01	0 to 14	1	Each



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Ohaus Starter Pen Meters

Convenient, Accurate Results in Seconds

- Portable and compact
- Single-hand operation
- Durable IP67 waterproof design
- Include wrist strap for security
- Auto shutdown after four minutes of non-use
- Require four AG13 1.5 V microalkaline batteries (included)
- Size/weight: 185 × 45 × 38 mm; 110 g



S05085

Model	Range	Resolution	Temp. Display	Cat. No.
pH Pen Meters				
ST10	0.0 to 14.0 pH	0.1 pH	No	S05084
ST20	0.00 to 14.00 pH	0.01 pH	Yes	S05085
ORP Pen Meters				
ST10R	-1,000 to 1,000 mV	1 mV	No	S05086
ST20R	-1,000 to 1,000 mV	1 mV	Yes	S05087
Conductivity Pen Meters				
ST10C-A	0.0 to 199.9 µS/cm	0.1 µS/cm	No	S05088
ST10C-C	0.00 to 19.99 mS/cm	10 µS/cm	No	S05090
ST20C-A	0.0 to 199.9 µS/cm	0.1 µS/cm	Yes	S05091
Salinity Pen Meters				
ST20S	0.0 to 80.0 ppt	+/- 1.5% FS	Yes	01-922-070

Choose from four models in a variety of calibrations.



S05084



S05086



S05087



S05088



S05091



01-922-070

Thermo Scientific™ Orion Star™ A121 Portable pH/mV/ Temperature Waterproof Meter



Take simple pH and temperature measurements with our portable pH meter with easy operation for basic field testing.

A simple, economical solution for your routine outdoor sample analysis. Featuring an emphasized measure key, selectable read modes and measurement stability indicator, it is designed to deliver measurements you can trust at an affordable price.

- Measure pH, mV or relative mV with temperature
- Perform up to a 3 point pH calibration with automatic buffer recognition or manual buffer entry
- Simplified, easy-to-read display shows main measurement with temperature, stability indicator and electrode condition icon
- User-friendly operation with basic calibration text prompts
- Easily recall calibration data for procedure checks
- Non-volatile memory preserves 50 point internal data log and meter settings, even with loss of power
- Flexible power options with AA batteries or optional universal power adapter
- IP67-rated housing is waterproof for rugged field operation
- Meter kits include hard-sided field case and protective meter armor with electrode holders, adjustable wrist/belt strap and built-in meter stand
- Meters offer CE, TUV 3-in-1 and FCC Class A certifications
- **13-645-504 includes:** Orion Star A121 pH Meter, 4 AA Batteries
- **13-645-506 includes:** Orion Star A121 pH Meter, 9107BNMD Gel-Filled Epoxy-Body pH/ATC Electrode, 916099 pH Buffer Kit, Protective Meter Armor, Hard-Sided Carrying Case, 4 AA Batteries

WARRANTY: 3-year replacement

Cat. No.	Description	Quantity	Unit of Measure
13-645-504	Orion Star A121 Portable pH Meter	1	Each
13-645-506	Orion Star A121 Portable pH Meter Standard Kit with General Purpose pH/ATC Electrode	1	Each

Ohaus™ Starter Water Analysis Portable pH Meters



LCD meters combine portability with precise pH measurement.

- Auto buffer recognition stores calibration data to avoid errors
- Automatic/manual temperature compensation for accurate readings
- ORP or temperature electrode connectivity for additional functionality
- IP54 protection shields water/dust damage
- Resolution: 0.01pH; 1mV; 0.1°C
- Size: 90 x 150 x 35 mm
- Weight: 0.18 kg

Cat. No.	Model	Quantity	Unit of Measure
S05080	ST300	1	Each
S05079	ST300-B – meter only, does not include an electrode	1	Each

Ohaus™ Starter™ pH Electrode



Features a durable shaft built to withstand daily use. Includes a temperature sensor, which powers automatic temperature compensation and ensures accurate measurements.

- Designed for accurate and precise measurement
- Can be used with both bench and portable meters
- Temperature sensor features automatic temperature compensation



Cat. No.	Junction	Material	Quantity	Unit of Measure
S05309	Fiber Pin	Plastic	1	Each
S05310	Ceramic	Glass	1	Each



Supporting Your Sustainability Journey

Wherever you are in setting goals to **pave a greener path forward**, the Fisher Science Education team is here to help.

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Stem Investigations: Create Your Own Power Kit

Teaches students to set up electrochemical cells utilizing different combinations of materials for the anode and the cathode of the cell.



- The voltaic cell is an electrochemical cell that produces electrical energy an oxidation-reduction chemical reaction
- In this activity students will set up electrochemical cells, with each group using a different combination of materials for the anode and the cathode of the cell
- Students will also compare two different styles of cell, one using a salt bridge and one using a semi-permeable membrane
- After determining the voltage output of their unique cells, and comparing their values to the rest of the class, students will be challenged to design an electrochemical cell capable of running a small motor
- Kit contains enough materials for 15 groups
- Teacher's manual and student study guide copy masters are included
- Grade 7 to 14

Cat. No.	Description	Quantity	Unit of Measure
S27135	Create Your Own Power Kit	1	Each

United Scientific™ Conductivity of Solutions Apparatus

This 3V conductivity tester demonstrates the electrical properties of various liquids. Includes Activity Guide.



- The item consists of a molded plastic lamp socket mounted on a base with two binding posts for connecting a wire cord
- Comes complete with a bulb and glass tumbler
- Includes activity guide
- Grade: 5+

Cat. No.	Description	Includes	Quantity	Unit of Measure
S13134	Conductivity of Solutions Apparatus	Bulb, Glass Tumbler	1	Each

United Scientific™ Conductivity Tester

NEW

Simple tool used to measure conductivity.

This handheld device provides a qualitative visual indicator of the conductivity of different solutions, acids or salts.



- Two brass probes can be touched to a solid substance, or immersed in a liquid, to show conductivity on green LEDs that range from 1 to 10
- Each probe is 53 mm long with a diameter of 3 mm. Overall length of the meter and probes together is 14 cm
- Includes a 12 V battery and operating instructions
- Grade 5 to 12

Cat. No.	Description	Quantity	Unit of Measure
S139480***	Conductivity Tester	1	Each



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fisherbrand Hydriion™ Jumbo Insta-Chek Display pH Papers



General purpose pH papers with distinct color match for ranges 0 to 13.

- Jumbo size pH papers
- Large color charts
- Enables clearer, quicker color matching
- Packaged in plastic dispenser
- pH range: 0 to 13
- Dimensions: 0.5 in. x 50 ft. (1.27 x 1,524 cm)

Note: Image above is representative only. Actual product may vary in appearance.

DISCLAIMERS: For diagnostic use only

Cat. No.	Description	Quantity	Unit of Measure
14-850-125	Hydriion Jumbo Insta-Chek Display pH Papers	1	Each

Insta-Chek™ 0-13 Wide-Range pH Test Paper/ Dispenser



Direct reading pH paper with 14 colors for 14 pH values—the widest range available on a single paper.

- Immediate response—colors are distinct and easily read for accurate, reproducible readings
- Single roll dispenser with one 0.5 in. x 50 ft. roll
- Quantity: 1000 Tests

Cat. No.	Type	pH Range	Quantity	Unit of Measure
14-850-2	Jumbo Roll	0 to 13	1	Each

fisherbrand Plastic pH Strips

Laboratory grade plastic pH strips in durable and easy to open flip-top vials.



- Easy-to-use — simply dip strip in solution to be tested and match to color chart immediately
- Single color match with full 0.5 in. (1.27 cm) matching area for quick and accurate matches
- Flip-top vial stays closed when dropped, but is easy to open with one-hand
- Sturdy vial keeps strips safe from the elements

Cat. No.	pH Range	Quantity	Unit of Measure
13-640-516	0 to 14	1	Each
13-640-518	6.5 to 13	1	Each
13-640-519	5 to 9	1	Each
13-640-520	0 to 6	1	Each
13-640-517	5.5 to 8	1	Each

fisherbrand Paper pH Strips

An easy choice for classroom experiments or demonstrations.



- Ideal for educational use
- Low-cost paper strips are easy to pass around the classroom
- Easy-to-use—simply dip strip in solution to be tested and match to color chart immediately

Cat. No.	pH Range	Type	Quantity	Unit of Measure
13-640-511	0 to 3	pH Test Paper	10	Case
13-640-508	0 to 14	pH Test Paper	10	Case
13-640-509	3 to 5.5	pH Test Paper	10	Case
13-640-510	6 to 8	pH Test Paper	10	Case
13-640-512	8 to 9.5	pH Test Paper	10	Case
13-640-513	10 to 12	pH Test Paper	10	Case
13-640-515	0 to 14	pH Test Paper Set	10	Case

fisherbrand pH Test Paper Rolls

General purpose pH papers
in efficient 15 ft. rolls.

- Convenient dispenser allows you to select the right amount of pH paper for each application
- Easy-to-use—Dip paper in solution to be tested and match to color chart immediately
- Highly accurate and well suited for most applications
- Each SKU is packed in box of five clear plastic dispensers
- Cat. No. 13-640-507 is a pH paper testing set that includes shrink wrapped pack of seven dispensers (one of each SKU)



Cat. No.	pH Range	Quantity	Unit of Measure
13-640-500	0 to 3	5	Case
13-640-507	0 to 14	7	Pack
13-640-506	1 to 12	5	Pack
13-640-501	3 to 5.5	5	Case
13-640-502	6 to 8	5	Case
13-640-503	8 to 9.5	5	Case

fisherbrand Economical Plastic pH Strips

Offer excellent color
separation in the pH range;
50 pH test strips/pack.

- Packaged in a zip lock pack
- Colorimetric chart is located on the vial label
- Plastic pH test strip construction
- Ideal for lab, field or classroom use
- Instant dip and read result



DISCLAIMERS: This product is not intended to diagnose, treat, cure or prevent any disease or condition. Please contact a medical doctor to diagnose and treat any medical condition.

Cat. No.	pH Range	Quantity	Unit of Measure
S21140	0 to 14	50	Pack

Eisco™ Paper Test Strips

Used for various tests on liquids.

**Genetic Taste Testing
Phenylthiourea (PTC) Paper Strips
(S80844)**

- Used to demonstrate the effects of heredity on taste — only 7 out of 10 people can taste PTC
- Perfect for a demonstration of genetics and heredity
- 100 Strips/Vial, 12 Vials/Pk



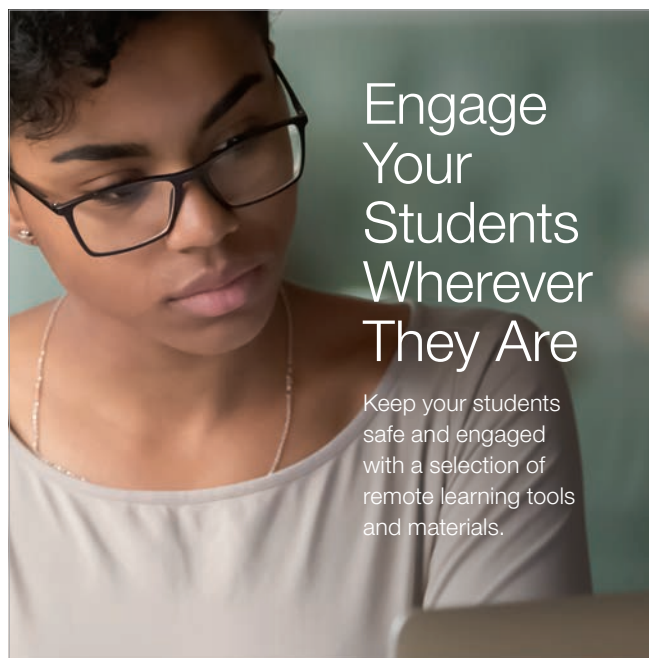
Methyl Violet Test Paper Strips (S80848)

- Narrow range pH
- Transitions from yellow at pH 0.2 to violet at pH 2.0
- Dip test strip in solution for 1-2 seconds and remove, no color chart necessary
- 100 Strips/Vial, 12 Vials/Pack

Cobalt Chloride Test Paper Strips (S80840)

- Detects the presence of moisture when exposed to humidity of 50% or greater
- Strip will turn from blue to light pink/white color in the presence of humidity
- Great for detecting moisture in hard to reach places
- 100 Strips/Vial, 12 Vials/Pack

Cat. No.	Description	Quantity	Unit of Measure
S80844	Phenylthiourea (PTC)	1	Each
S80848	Violet Paper	1	Each
S80840	Cobalt Chloride	1	Each



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Double Roll pH Test Paper Dispensers

Hydriion™ Double Roll pH Papers consist of two rolls of pH papers packaged in a protective plastic dispenser with stainless steel cutoff lips and two matching color charts. pH color changes are distinct and easily matched to the color chart.



- Features cut-off lips on each side
- Wide-range papers provide a sharp color change for each full pH unit
- Short-range papers change for each 0.5 pH unit

Each carton contains 10 dispensers, each consisting of two 15-foot rolls of test paper and matching color charts. Provides for approximately 2000 tests.

Directions

Simply tear off a small strip of pH paper, dip into the test solution, then instantly compare the resulting color with the matching pH color chart.

DISCLAIMERS: This product is not intended to diagnose, treat, cure or prevent any disease or condition. Please contact a medical doctor to diagnose and treat any medical condition.

Cat. No.	pH Range	Type	Quantity	Unit of Measure
14-850-10C	1 to 5.5	Short-range pH Test Paper	1	Each
14-850-12C	1 to 6	Wide-range pH Test Paper	1	Each
14-850-12J	1 to 11	Wide-range pH Test Paper	1	Each
14-850-12A	1 to 11	AB Wide-range pH Test Paper (Roll No. 1 (Type A) pH range 2-4-6-8-10; Roll No. 2 (Type B) pH range 1-3-5-7-9-11)	1	Each
14-850-11B	1 to 12	Wide-range pH Test Paper	1	Each
14-850-13B	1 to 14	Wide-range pH Test Paper	1	Each
14-850-10E	3.5 to 5.5	Short-range pH Test Paper	1	Each
14-850-10J	3 to 8	Wide-range pH Test Paper	1	Each
14-850-12B	4 to 9	Wide-range pH Test Paper	1	Each
14-850-10K	6 to 8	Wide-range pH Test Paper	1	Each
14-850-10M	6 to 9.5	Short-range pH Test Paper	1	Each
14-850-12D	6 to 11	Wide-range pH Test Paper	1	Each
14-850-10P	8 to 12	Wide-range pH Test Paper	1	Each
14-850-10V	10 to 14	Wide-range pH Test Paper	1	Each

Eisco™ Litmus Test Papers

100 Strips/Vial, 12 Vials/Pk.

- **Blue pH paper (S80845)** indicates presence of an acid; pH range 4.3-6.8
- **Red pH paper (S80846)** indicates presence of a base; pH range 6.8-8.1
- **Neutral paper (S80849)** tests for acidity, neutrality or alkalinity; turns red in presence of acid (pH7)



Cat. No.	Description	Quantity	Unit of Measure
S80845	Blue Litmus pH Test Paper: Acid Indicator	1	Each
S80846	Red Litmus pH Test Paper: Base Indicator	12	Pack
S80849	Neutral Litmus Test Paper	1	Each

United Scientific™ pH Paper

Determine the pH of wide range of solutions!

- pH range: 1-14
- Each vial includes 5 packs of 20 strips



Cat. No.	Description	Quantity	Unit of Measure
S99398	Wide Range pH Paper	1	Each

United Scientific™ Litmus Paper

Available as Litmus paper and Litmus Granular in bottles.

- 100 strips each in matching color plastic vials
- Individual strips are approximately 2 in. long and 0.25 in. wide



Cat. No.	Type	Quantity	Unit of Measure
S99399	Red Litmus Paper	1	Each
S99400	Blue Litmus Paper	1	Each
S99401	Neutral Litmus Paper	1	Each

United Scientific™ Hoffman Electrolysis Apparatus

For qualitative and quantitative study of electrolytic decomposition of electrolytes, such as water and hydrochloric acid.

- Tubes are 2 in. (50 mm) each
- Dimensions: 24 x 12 x 6 in. (61 x 31 x 15 cm)

INCLUDES: Support stand, burette clamp, extension clamp, bosshead clamp, pair of platinum electrodes, pair of carbon electrodes, activity guide



Cat. No.	Description	Quantity	Unit of Measure
S07009	Hoffman Electrolysis Apparatus	1	Each
S07010	Replacement Platinum Electrodes	2	Pack

Advanced Placement Chemistry

AP Chemistry Kits: Complete Set of 22

Be prepared for the entire school year with this complete set of all 22 AP Chemistry lab activities.

- Thermochemistry & Hess Law
- Activity Series
- Mole Ratio Reactants
- Le Chatelier's Principle
- Ester Formation
- Acid-Base
- Reaction Kinetics
- Dissociation of Weak Acids
- Qualitative Analysis
- Beer-Lambert Law
- Stoichiometry
- Equilibrium Constant
- Oxidation-Reduction
- Freezing Point Depression
- Vapor Pressure
- Electrochemical Cells
- Thin-Layer Chromatography
- Molecular Mass of a Liquid
- Thermochromism
- Water Hardness
- Synthesis of Aspirin
- Grignard Method



Cat. No.	Description	Quantity	Unit of Measure
S90748***	Complete Set Chemistry Kit	1	Each

AP Chemistry Kits: The Electrochemical Series

Discover electrode potential.

- The electrochemical series is built up by arranging various redox equilibria in order of their standard electrode potentials
- When a strip of metal is placed in water, the metal has a tendency to go into solution as ions with a simultaneous buildup of electrons on the metal strip
- The process produces an electrical potential difference between the metal and solution
- Grade 7 to 14



Cat. No.	Description	Quantity	Unit of Measure
S96899	Electrochemical Series Chemistry Kit	1	Each

AP Chemistry Kits: Le Chatelier's Principle

In this experiment, see Le Chatelier's Principle by observing physical changes to solutions as systems are stressed.

- Le Chatelier's Principle is a qualitative rule that allows the prediction of the effect of temperature, pressure and concentration changes on chemical reactions
- The principle states that a chemical system at equilibrium when stressed by external forces will adjust in such a way as to minimize that stress
- Grade 7 to 14



Cat. No.	Description	Quantity	Unit of Measure
S90729	Le Chatelier's Principle Chemistry Kit	1	Each

AP Chemistry Kits: Electrochemical Cells

Electrolysis of water produces hydrogen and oxygen.

The tendency of oxidation-reduction reactions is to proceed to an equilibrium state. In electrochemical cells, these reactions provide another way for us to express the driving force in chemical reactions.

When reagents that accept or donate electrons are arranged so that the electrons can enter or leave the reaction through a metallic conductor, an electrochemical cell is established. A half-cell contains a metal in contact with a solution of its salt. Each metal will develop a different electrical potential based on its electron configuration.

The standard reduction potential listed in various references is the voltage that a half-cell develops when combined with a hydrogen half-cell. First, construct a simple chemical battery and determine from the standard reduction potentials what the output of the battery will be (if a voltmeter is available the actual and theoretical voltages can be compared). Second, construct an electrolysis cell and demonstrate how hydrogen and oxygen can be produced from the electrolysis of water.

- Electrolysis cell is the reverse of a battery where a voltage higher than the reversible electromotive force of the cell is applied to the electrodes
- In a cell containing water and an electrolyte, the oxidation reaction occurring at the anode produces oxygen gas while the reduction occurring at the cathode produces hydrogen gas
- By the addition of a pH indicator, the oxidation-reduction reactions can be monitored visually
- Gases produced are collected in inverted test tubes and the volumes of hydrogen and oxygen are compared
- Grade 7 to 14



Cat. No.	Description	Quantity	Unit of Measure
S90741*	Electrochemical Cells Chemistry Kit	1	Each

AP Chemistry Kits: Reaction Kinetics

In this experiment, the time it takes for a reaction to occur is monitored by observing a color change.

Determine the rate law by varying the concentration of reactants. Determine the activation energy by varying temperature. The data should be graphed and analyzed during the lab so additional measurements can be made if necessary.

In a chemical reaction, reactants are converted to product at a given rate. This rate can be changed by alternating either the temperature of the reaction, the form of the reactants, the concentration of reactants or products, or by adding a catalyst.



Cat. No.	Description	Quantity	Unit of Measure
S90732	Reaction Kinetics Chemistry Kit	1	Each



Kemtec™ AP Chemistry Series Kit

Includes 16 labs designed to meet the essential laboratory requirements of an AP Chemistry course.



Includes:

- Statistics: Precision & Accuracy (no glassware S07328)
- Spectrophotometric Analysis of Copper: Beer's Law (S07330)
- Synthesis and Gravimetric Analysis of Cobalt Oxalate Hydrate (S07331)
- Acid-Base Titrations: An Inquiry Investigation (S07332)
- Separating Substances by Absorption Chromatography (S07333)
- Stoichiometry: Reactions with Copper Compounds (S07334)
- Stoichiometry: Mole Ratio of an Unknown (S07335)
- Determining Molar Mass by Colligative Properties (S07336)
- Determining Molar Mass Using the Ideal Gas Equation (S07337)
- Reaction Rate and Order (S07338)
- Determining Molar Enthalpy Using Hess's Law (S07339)
- Le Chatelier's Principle Featuring Ag⁺ reaction (S07340)
- Identifying Weak Acids by pK_a (S07341)
- Preparing Buffer Solutions and Determining Their Properties (S07342)
- Determining the Equilibrium Constant (and Temperature's Effect) with Beer's Law (S07343)
- Micro-Scale Electrochemical Cells – Voltaic and Electrolytic (S07344)

Compatible with optional data collection and simulations using TI-Nspire handhelds and software. Includes a balance.

Cat. No.	Description	Quantity	Unit of Measure
S07345	Basic AP Chemistry Series Kit	1	Each

Earth & Space

Geology

Diversified Spaces™ Augmented Reality Sandbox

Allows users to create topography models by shaping real sand, which is then augmented in real time by an elevation color map, topographic contour lines, and simulated water and lava.

This amazing sandbox uses 3D visualization applications and a hands-on exhibit combining a real sandbox, virtual topography and water created using a closed loop of a Microsoft Kinect 3D camera, powerful simulation and visualization software, and a data projector. The system teaches geographic, geologic, and hydro-logic concepts such as how to read a topography map, the meaning of contour lines, watersheds, catchment areas, levees, and much more.



- Dimensions (W x D x H): 48 x 30 x 36 in.
- Made in the U.S.A.
- Comes complete with the box, camera, projector, wire management, and laptop loaded with visualization software
- Solid oak and oak veneer construction with heavy duty locking casters
- Finished with a durable UV earth-friendly finish
- Includes detailed instructions for calibrating the software and running the program
- Features a shelf for laptop with wire management system
- Kit includes Microsoft Kinect 3D camera, powerful simulation and visualization software, and a data projector

Note: Sand not included (we recommend 250 lbs. of Sandastik™ sparkling white play sand)

CERTIFICATION: SEFA compliant and MAS Certified Green

WARRANTY: Lifetime limited

Cat. No.	Color	Quantity	Unit of Measure
S37563	Northwood (Red Oak)	1	Each

Kemtec™ Volcanic Eruption Kit

A hands-on volcano model building project complete with safe, simulated lava eruptions.



Students learn the strength of Mother Nature and the good that can come from natural disasters.

- Learn volcano types, volcano parts, how volcanoes function, and about precious gems volcanoes make
- Building materials appropriate for elementary and middle school classrooms
- Investigate underwater volcanoes with the included demonstration
- Grades 3 to 8
- Class size: 24 students

⚠️ ALERTS: CHOKING HAZARD (1). Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S02084	Volcanic Eruption Kit	1	Each

Eisco™ Seismograph Model

This freestanding seismograph model simulates all the parts of a seismograph and can produce a record of localized movement by running a pencil over a roll of paper. The measurements made by the seismograph can be studied and analyzed, allowing students to compare several different seismic events.



- Freestanding tabletop seismograph model designed to simulate seismic wave measurements by running a pencil over a roll of paper
- This model simulates all the parts of a seismograph and can produce a record of localized movement
- Types of measurements that can be recorded include magnitude, proximity, location, and wave generation
- This kit includes (1) Seismograph metal base (1) Seismograph Arm (1) Standing metal rod with nut (1) Paper roll
- Instruction manual includes directions for assembly and activities
- Dimensions (L x W): 12.99 x 5.9 in. (33 x 15 cm)

Cat. No.	Description	Quantity	Unit of Measure
S05845	Seismograph Model	1	Each

United Scientific™ Fault Model



A set of six 3D manipulatives for demonstrating normal faulting, reverse (thrust) faulting and horizontal faulting.

- Includes access code to download interactive teacher and student guides, videos, geoinformation data sets, and other resource information
- Demonstrate various faults
- Foam manipulatives
- Grade 5 to 12



Cat. No.	Description	Quantity	Unit of Measure
S89561***	Fault Model	1	Each

Eisco™ Fact and Fault Model

Useful for illustrating important folds and faults found in Earth's crust. Students can understand fold planes, the effect of tectonic stress, and structural elements of a fault.

- Perfect for classroom and laboratory study
- Set includes 5 pieces
- Includes identification key
- Approximate weight: 6.5 lb.

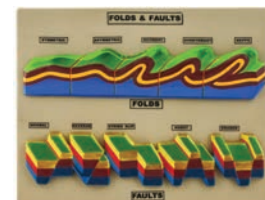


Cat. No.	Description	Quantity	Unit of Measure
S27469	Fact and Fault Model	1	Each

Eisco™ Fold and Fault Model

Illustrates important folds and faults found in Earth's crust. Model provides a visual/tactile view of symmetric, asymmetric, recumbent, over thrust, and neppe folds. Normal, reverse, strike slip, horst and graben faults are also represented.

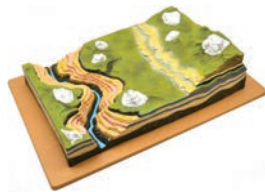
- Perfect for classroom and laboratory study
- Displays the age of different earth bedding and stratification
- Folds: symmetric, asymmetric, recumbent, over thrust, and neppe
- Faults: normal, reverse, strike slip, horst, and graben
- Identifications labeled on model base
- Approximate weight: 1.5 lb.
- Dimensions (L x W) 10 x 13 in.



Cat. No.	Description	Quantity	Unit of Measure
S27470	Fold and Fault Model	1	Each



Eisco™ Premium Horizontal Strata Model



Demonstrates underlying strata and typical phenomenon of water erosion features

in Arizona, Utah, the Grand Canyon, and the Grand Staircase. Includes a numbered key card to help students identify 27 distinct geological landscapes.

- Displays the typical phenomenon of water erosion
- Designed for educational use
- Created from PVC, mounted on a sturdy wooden base
- Hand painted
- Identify the following features: Mountains, Pink Cliffs, Painted Dessert, North Rim, Grand Canyon, Cape Royal, South Rim, Bryce Canyon, Kaibab Plateau, Colorado River, Kaiparowits Formation, Wahweap Sandstone, Tropic Formation, Dakota Sandstone, Carmel Formation, Kaibab Formation, Sevier Fault, White Cliffs, Badlands, Hoodoo Fields, Tapeats Sandstone, Bright Angel Shale, Muave Limestone, Supai Group, Hermit Shale, Coconino Sandstone, and Toroweap Formation
- Dimensions: Model – 19.5 x 13 in., Base – 24 x 16 in.

Cat. No.	Description	Quantity	Unit of Measure
S27471	Premium Horizontal Strata Model	1	Each

United Scientific™ Tectonics Model Set



Demonstrates

plate tectonic principles, plate

boundary interactions, and the geometry/relative motions of faulting of geological layers.

- Contains a Fault 3D Model Set (5 manipulatives) and a Tectonics Sand Layer Model
- Fault Model Set demonstrates normal faulting (extension), reverse faulting (compression), and horizontal slip faulting (shear)
- Tectonics Sand Layer Model explores orogeny of the Appalachian mountains, including coal formation in the sedimentary Appalachian basin and its coal seam
- Construct a sand layer model system mimicking a subduction zone of oceanic crust (Juan de Fuca plate)
- Simulate the creation of the San Andreas fault
- Includes three hands-on, geoinformation activities for students to work on using metadata (Map the Continental Shelf, Tectonic Plate Movement, Earthquake Prediction)
- Access code is provided to download interactive teacher and student guides, videos, geoinformation data sets, and other resource information

Cat. No.	Description	Quantity	Unit of Measure
S27858	Tectonics Model Set	1	Each

Landform 3D Models



Investigate geographical and geological features.

- Eight 3D landform models showing the mountains, lakes, rivers, deserts, glaciers, coastlines, canyons and cultural point
- Includes lesson plan
- Finished size 35 x 35 in.

Cat. No.	Description	Quantity	Unit of Measure
S81674	Landform Discover Pack	1	Each

Eisco™ Fractures, Faults and Dislocations Model

Excellent way to illustrate various structures related to fault planes and fractures.



- Shows cross section of five different structural features
- Made of colored, unbreakable material
- Mounted on base
- Dimensions (L x W): 22.4 x 9.84 in. (57 x 25 cm)

Cat. No.	Description	Quantity	Unit of Measure
S05844	Fault and Dislocations Model	1	Each

Student Learning Guides with Online Lesson

An ideal blended learning solution for use in the classroom or for remote learning/home study.

- 36 page colorfully illustrated student learning guide features self directed readings, easy to follow illustrated explanations, guiding questions, lab investigation, key vocabulary, review and assessments.
- Also includes one year access to a corresponding multimedia lesson for a teacher and all of their students. Each lesson features animated, narrated tutorials, interactive exercises and activities, virtual lab investigations, illustrated narrated glossary, visual resource library and an inquiry based student activity guide.
- Developed under sponsorship of the National Institutes of Health (NIH) the lessons are perfect for individual student instruction on any computer or tablet as well as classroom presentation on any Interactive Whiteboard.

S436022 Minerals – topics include:

- What is a Mineral
- Minerals vs Rocks
- Properties of Minerals
- Crystals and Special Properties
- How do Minerals Form
- Mineral Resources
- Mining and the Environment
- Use of Minerals
- Identifying Minerals
- Grade 6 to 10

S436023 Rocks – topics include:

- What is a Rock
- Classifying Rocks
- Igneous Rocks
- Magma, Lava and Igneous Rock
- Sedimentary Rocks
- Metamorphic Rocks
- The Rock Cycle
- Identifying Rocks
- Use of Rocks and Minerals

S436024 Plate Tectonics – topics include:

- Earth's Interior
- Heat Transfer and Convection Currents
- Continental Drift
- Sea Floor Spreading
- Plate Tectonics
- Plate Tectonic Boundaries
- Changes in the Earth's Surface
- Volcanoes and Plate Boundaries
- Earthquakes and Plate Boundaries

S436025 Earthquakes – topics include:

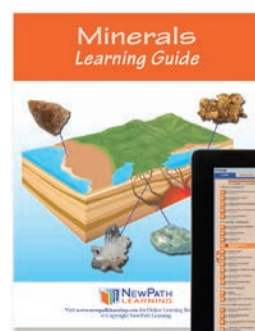
- How an Earthquake Occurs
- Types of Stress in Crustal Rock
- Faults in the Earth's Crust
- How the Earth's Surface Changes
- Seismic Waves
- Measuring Earthquakes
- The Richter Scale
- Earthquake Destruction
- Earthquake Safety
- Grade 6 to 10

S436026 Volcanoes – topics include:

- What is a Volcano
- Volcanoes and Plate Boundaries
- The Ring of Fire
- Properties of Magma
- Inside a Volcano
- Volcanic Eruptions
- Volcanic Classification
- Life Cycle of Volcanoes
- Volcanic Landforms
- Hot Springs and Geysers

S436027 Earth's Surface – topics include:

- Weathering and Erosion
- Erosion and Deposition Cycle
- Mechanical Weathering
- Chemical Weathering
- Forces of Erosion and Deposition
- Water, Glaciers, Soil and Landforms
- Topographic Maps



Cat. No.	Description	Quantity	Unit of Measure
S436022	Minerals	1	Each
S436023	Rocks	1	Each
S436024	Plate Tectonics	1	Each
S436025	Earthquakes	1	Each
S436026	Volcanoes	1	Each
S436027	Earth's Surface	1	Each

3-D Model Kits

Assemble and use 3-D models to visualize and investigate key science processes.

- Gain a critical understanding of complex structures & processes through the assembly of 3-dimensional models
- Kit includes enough materials for students to assemble up to 10 paper models by working either independently or cooperatively in small groups
- Also includes comprehensive Teacher Resource Guide outlining opportunities for your students to Engage, Explore, Explain, Extend & Evaluate their understanding of key Scientific concepts
- Satisfies NGSS Standards which encourage students to develop & use models to represent structures, systems & processes, then provide explanations, make predictions or investigate solutions
- Perfect for use in the classroom, lab or at home
- Grade 6 to 10



Cat. No.	Description	Quantity	Unit of Measure
S81479	Climate Change	1	Each
S81480	Earthquakes	1	Each
S81481	Minerals	1	Each
S81482	Rock Cycle	1	Each
S81483	Structure of the Earth	1	Each
S81484	Tectonics Plates	1	Each
S81485	Volcano	1	Each

Eisco™ Mineral ID Kit

Test mineral hardness, streak color, magnetic properties, appearance, and effervescence to identify different minerals and mineral content within rock specimens. The Mineral ID Kit is a fun way to explore the variety of techniques that geologists use to identify rocks and minerals.



- 7 piece kit includes seven essential tools - reusable streak plate, glass plate, dropper bottle, magnet, nail, copper square & retractable hand lens
- Portable, pocket size tools are perfect for field testing
- Comes in zip lock bag for easy storage
- Useful for demonstrations in identifying and classifying rocks and minerals
- Perfect for group activities
- Test mineral hardness using the glass plate, nail and copper square
- Test streak color by rubbing mineral across the streak plate
- Using the magnet, determine if your mineral has strong, weak or no magnetic properties
- LDPE dropper bottle useful for storing and performing an effervescence test (requires dilute hydrochloric acid, not included)
- The retractable magnifying glass is perfect for close up examinations of your minerals and testing results
- Option to purchase with 9 piece mineral kit (S81493) calcite, crystal quartz, gypsum, hematite, magnetite, microcline, muscovite, pyrite, talc

Cat. No.	Description	Quantity	Unit of Measure
S27922	ID Kit without Minerals	1	Each
S81493	ID Kit with 9 Minerals	1	Each

United Scientific™ Mineral Test Kit

For rock, mineral, and fossil identification.

- **Includes:** hardness scale, dropper bottle, hand lens, glass streak plate, black streak plate, white streak plate, ceramic bar magnet, nail and penny



Cat. No.	Description	Quantity	Unit of Measure
S81054***	Mineral Test Kit	1	Each

United Scientific™ Mineral Activity Kit

A complete solution for young geologists.

This activity kit contains 20 types of minerals specimens that students can investigate the Mohs hardness scale, streak test, magnetism and acid resistance test.

- The minerals specimens include talc, gypsum, calcite, fluorite, apatite, orthoclase, quartz, topaz, corundum, magnet
- Accessory tools: knife, iron nail, magnet, streak plate, glass plate, copper plate, iron plate, garnet board, hand lens, acid drop bottle (acid not included)
- Instruction manual included
- Average sizes are 2 x 3 x 1.5 cm



Cat. No.	Description	Quantity	Unit of Measure
S89553***	Mineral Activity Kit	1	Each

Eisco™ Mohs Hardness Kit

For use in field, laboratory, or for personal use to determine hardness of unidentified samples. Mohs Hardness Kit contains nine specimens with distinct hardness and key.

- Classroom tool for hands-on demonstration of mineral hardness
- Numbered and stored in sturdy, sectioned container for easy access and safety



Cat. No.	Description	Quantity	Unit of Measure
S24660	Mohs Hardness Kit	1	Each



United Scientific™ Rock and Mineral Collection

Students can study 20 types of rocks and minerals.

- Collection contains 10 rock specimens including igneous, sedimentary, and metamorphic rocks, and 10 mineral specimens
- Grade 5 to 12
- Rock specimens include:** Basalt, Granite, Pumice, Gneiss, Marble, Quartzite, Serpentine, Bituminous Coal, Limestone, Sandstone
- Mineral specimens include** Agate, Calcite, Dolomite, Feldspar, Graphite, Gypsum, Magnetite, Pyrophyllite, Quartz, Tourmaline
- Average size: 2 x 3 x 1.5 cm



Cat. No.	Description	Quantity	Unit of Measure
S89547***	Rock and Minerals	1	Each

United Scientific™ Rock Collection

Contains 20 Types of Basic Rocks Specimens of Igneous, Sedimentary, and Metamorphic Rocks Types.

- Rock specimens include:** Basalt, Gabbro, Granite, Obsidian, Pegmatite, Pumice, Anthracite, Gneiss, Marble, Quartzite, Serpentine, Slate, Chalk Lumps, Conglomerate, Diatomite, Flint, Lime Stone, Rock Salt, Sand Stone and Shale
- Average sizes are 2 x 3 x 1.5 cm
- Grade 5 to 12



Cat. No.	Description	Quantity	Unit of Measure
S89548***	Rock Set	1	Each

United Scientific™ Mineral Set

Contains 20 Types of Basic Minerals Specimens.

- Mineral specimens include:** Agate, Amethyst, Barytes, Calcite, China Clay, Dolomite, Feldspar, Fire Clay, Fullers Earth, Graphite, Gypsum, Jasper, Magnetite, Mica, Pyrolusite, Pyrophyllite, Quartz, Soap Stone, Sulphur, Tourmaline
- Average sizes are 2 x 3 x 1.5 cm
- Grade 6 to 10



Cat. No.	Description	Quantity	Unit of Measure
S89549***	Minerals	1	Each



Eisco™ Igneous Rocks Kit

For use in classification and identification of Igneous rocks. The Igneous Rocks Kit contains 12 specimens and specimen key.

- Numbered and stored in sturdy, sectioned container for easy access and safety
- Average specimen size: 2 to 3 cm
- Igneous rocks form from cooling and crystallization of magma or lava
- Can cool slowly underground or be shot hundreds of feet into air



Cat. No.	Description	Quantity	Unit of Measure
S24664	Igneous Rocks Kit	1	Each

Volcanic Rocks and Minerals Collection

Includes case and key card.

- Volcanic rocks: basalt, phonolite, pitchstone, rhyolite
- Lava: Lava from Vesuvius, basaltic lava and rhyolitic lava
- Pyroclasts: lapilli, volcanic ash, pumice stone
- Minerals: anorthite, anorthoclase, augite, cristobalite, hauyne, leucite, natrolite, nepheline, pickeringite, sanidine, sulphur, thaumasite, tridymite, obsidian
- 24 rocks



Cat. No.	Description	Quantity	Unit of Measure
S20724	Volcanic Rocks and Minerals Collection	1	Each

Eisco™ Sedimentary Rocks Kit

For use in identification of depositional history of sedimentary rocks based on their grain size and composition.

- Contains 12 specimens and specimen key
- Classroom tool for sedimentary rock classification and identification
- Numbered and stored in sturdy, sectioned container for easy access and safety
- Average specimen size: 2-3 cm
- Size and shape of grains can be used to identify what kind of environment would have formed particular rock



Cat. No.	Description	Quantity	Unit of Measure
S24665	Sedimentary Rocks Kit	1	Each



Rock Specimens for Hands-On Learning

To teach your students about rocks, minerals, and geology, you need the right tools. Choose from a full selection of individual rock specimens and rock collections for your classroom.



Featured Eisco™ Rock Specimens and Kits

Description	Quantity	Cat. No.
Apatite Specimen, 3 cm	Each	S39309
Biotite Mica Mineral Specimen, 2 to 3 cm	12/Pack	S24682
Calcite Specimen, 2 to 3 cm	Each	S24683
Carbonaceous Shale Specimen, 2 to 3 cm	Each	S24742
Granite Specimen, 2 to 3 cm	10/Pack	S26609
Halite Mineral Specimen, 2 to 3 cm	12/Pack	S24692
Hornblende Specimen, 2 to 3 cm	Each	S24695
Limestone Specimen, 2 to 3 cm	12/Pack	S24727
Olivine Specimen, 2 to 3 cm	Each	S24706
Pegmatite Igneous Rock Specimen	12/Pack	S27612
Pyrite Mineral Specimen, 2 to 3 cm	Each	S24708
Sandstone Specimen, 2 to 3 cm	12/Pack	S24739
Physical Properties of Minerals Kit	Each	S24661
Introduction to Minerals Kit	Each	S24662
Eisco™ Rock and Mineral Sample Set, 12 Pieces	Each	S81494

Most rock specimens are available as both single samples and packs of 10 or 12. Other sample types are available.

Visit fisheredu.com or contact your Fisher Science Education sales representative to access our full selection of products.

United Scientific™ Sedimentary Rock Set

NEW

Explores the deposition of materials on the Earth's surface and within bodies of water.

- The set includes: bituminous coal, breccia, chalk lumps, chert, diatomite, flint, laterite, lime stone black, lime stone siliceous, mud stone, rock phosphate, rock salt, sand stone red, sand stone siliceous, shale
- Average sizes are 2 x 3 x 1.5 cm
- Grade 5 to 12



Cat. No.	Description	Quantity	Unit of Measure
S89551***	Sedimentary Rock Set	1	Each

United Scientific™ Metamorphic Rock Set

NEW

Learn about the transformation of existing rock types due to extreme heat and pressure.

- Set includes anthracite, biotite schist, gneiss, marble black, marble green, marble pink, marble white, mica schist, phyllite, quartzite gray, quartzite green, quartzite white, serpentine, slate, tiger eye
- Average sizes are 2 x 3 x 1.5 cm
- Set of 15
- Grade 5 to 12



Cat. No.	Description	Quantity	Unit of Measure
S89550***	Metamorphic Rock Set	1	Each

Eisco™ Fossil Replica Collection, 4 Pieces

NEW

The Fossil Replica Collection includes four identified specimens, information cards, and a geological timescale.

- Set of 4 replica fossils - Bivalve, Fish, Hardouinia, Perisphinctes
- Each fossil comes packaged with an information card in a plastic bag for safe and convenient storage
- Use the included timescale to locate fossil specimens in geologic history
- Ideal in an earth science classroom, or for any geologist's collection
- Assembled in the United States
- Grade K to 14



Cat. No.	Description	Quantity	Unit of Measure
S15015	Fossils	1	Each

Eisco™ Fish Fossil Replica, Mesozoic

This fossil replica represents a mold of a ray-finned fish that died and was buried in the ocean. This fossil is great in the classroom for teaching about paleontology and fossil preservation.

- Fossil replica of a Mesozoic fish imprint measuring approximately 4 x 10 cm (1.5 x 3 in.).
- Replica is built from a sturdy resin designed to last through heavy classroom and laboratory use.
- This replica represents one of the first species of bony fish that evolved before dinosaurs ever walked the earth.
- Ideal for use in the classroom during lessons on fossils and paleontology.
- Replica demonstrates mold replacement of bone and scale on a ray-finned fish.
- Grade 6 to Undergraduate



Cat. No.	Description	Quantity	Unit of Measure
S24548	Fish Fossil Replica, Mesozoic	1	Each

Eisco™ Metamorphic Rocks Kit

For study of foliation and alteration of these metamorphic rocks to understand the immense heat and pressure needed to form them. The Metamorphic Rocks Kit contains 12 specimens measuring approx. 3 cm (1 in.) and specimen key.

- Classroom tool for metamorphic rock classification and identification
- Numbered and stored in sturdy, sectioned container for easy access and safety
- Average specimen size: 2 to 3 cm
- Classified based on whether or not they are foliated, as well as grade of metamorphism



Cat. No.	Description	Quantity	Unit of Measure
S24666	Metamorphic Rocks Kit	1	Each

United Scientific™ Streak Plates

Designed for hardness testing of rocks and minerals.

- Available in black porcelain, white porcelain, or glass
- Size: 1 x 2 in. Glass plates also available in 1 x 1 in.



Cat. No.	Description	Quantity	Unit of Measure
S81059	Black, 1 x 2 in.	10	Pack
S81053	White, 1 x 2 in	10	Pack
S81055	White, 1 x 2 in	1	Each
S67817	Glass, 1 x 1 in.	10	Pack
S67818	Glass, 1 x 2 in.	10	Pack



Microslide™ – Rocks and Rock Forming Minerals

Microslide strip consists of images photographed through a microscope. Arrows and call outs help the student locate features. This Microslide is accompanied by a detailed lesson plan to stimulate, inform, and question students.

Image titles on Microslide:

- Sedimentary - red sandstone (50x)
- Sedimentary - shell limestone (50x)
- Igneous - basalt (50x x.n. 50x)
- Igneous - granite - ordinary light (50x x.n. 50x)
- Igneous - proxenite (50x)
- Metamorphic - mica schist (15x)
- Metamorphic - mica schist - x.n. (50x)
- Metamorphic - dolomitic marble - x.n. (50x)

Includes:

- Lesson plan with Pocket to store Microslide
- Reproducible worksheet with a purchase of 15
- Dimensions (L x W): Lesson Plan 6.5 x 8 in., Slide 2 x 8 in.



Relief Globe

Tabletop globe with lighting on a metal-reinforced plastic stand with double-image map and tactile 3D relief of mountain ranges. When not lit, globe shows a physical map of earth. When lit, the current political position is shown with countries and borders.

- Meridian: plastic, transparent
- Lamp socket: E14



Cat. No.	Description	Quantity	Unit of Measure
S20738	Relief Globe	1	Each

United Scientific™ Inflatable Geopolitical Globe

Highlights country capitals, important cities, time zones, international boundaries and geographic features.

- Inflatable world globe
- The globe is 10 in. tall and 12 in. wide when inflated
- Grade 5 to 12



Cat. No.	Description	Quantity	Unit of Measure
S89563***	Inflatable Globe	1	Each

Geography

Eisco™ Globe Model

Geographical globe with political boundaries.

- Plastic graduated arc
- 30 cm diameter



Cat. No.	Description	Quantity	Unit of Measure
S24456	Model, Geographical Globe	1	Each

Eisco™ Earth Globe Model

Showcases cross-sectional view of interiors of Earth.

- Seven detachable parts
- Different colors for different layers
- Removable upper crust shows inner core with layers



Cat. No.	Description	Quantity	Unit of Measure
S24457	Model, Earth Globe	1	Each

Atlantis Globe

Mountains rise from its surface, continental slopes descend to its ocean floor.

- Gyromatic mounting with numbered full-meridian swings up or down to bring any area into closer view
- Raised and depressed relief globe vividly reveals suboceanic mountains, trenches, and fracture zones
- Natural colors illustrate mountains, deserts, forests, and grasslands
- Snow and ice are also depicted
- Globe diameter: 12 in.



Cat. No.	Description	Quantity	Unit of Measure
S45159	Physics Relief Globe	1	Each



Traveler Political Globe

Scratch-resistant world globe with mountain ranges around the globe rendered in raised relief and crisp, bright colors used to denote each country. This globe is a great tool for helping children of all ages learn world geography.

- Blue oceans with brightly-colored land formations
- Scratch-resistant black acrylic base
- Semi-meridian in a smoky-gray finish
- Raised relief surface clearly denotes mountain ranges
- Dimensions (Dia. x H): 12 x 16 in.



Cat. No.	Description	Quantity	Unit of Measure
S04401	Political Desk Globe	1	Each

Explorer Political Globe

Experience 3D mountains in raised relief and political regions in vivid, contrasting colors.

- Ideal for the study of geography, history, science and other subjects
- Dimensions (Dia. x H): 12 x 16 in.



Cat. No.	Description	Quantity	Unit of Measure
S45160	Political Desk Globe	1	Each

Pioneer Political Globe

The Pioneer globe has Gyro-matic mounting and illustrates mountain areas that have 3-dimensional raised-relief shading, related to countries according to their evaluation.

- Vivid map to help easily distinguish political boundaries
- Gyro-matic mounting with up or down motion
- Easily distinguishable political boundaries
- Numbered full-meridian and gyro assembly
- 12 in. diameter
- 14 L x 14W x 16 in. H



Cat. No.	Description	Quantity	Unit of Measure
S04399	Pioneer Political Globe	1	Each

Ocean Floor Raised Relief Map

Relief map of North Atlantic Ocean showing typical portion of ocean floor.

- Easy to identify all the major ocean features
- Complete with lesson plan
- Dimensions (L x W): 18 x 24 in.



Cat. No.	Description	Quantity	Unit of Measure
S81667	Relief Map of North Atlantic Ocean	1	Each

Mid-Atlantic Ridge Model

Shows the S-shaped course in 3D of the volcanic mountain range produced by tectonic shifts in the Atlantic Ocean.

- Size at the equator: 1:320,000,000
- Weight: 6.5 kg



Cat. No.	Description	Quantity	Unit of Measure
S20721	Mid-Atlantic Ridge Model	1	Each

Eisco™ Globe – Writable

Teaching tool that allows students to make and erase notes and markings as they learn about their planet. EISCO Globe - Writable is ideal for any home or classroom setting.

- Built of rugged plastic
- Features both warm and cold currents as well as blank land masses that can be colored in as students learn
- Screw mounted on stable platform and encased in a half-circle meridian ring
- Dimensions (L x W x H): 11.8 x 13 x 17.3 in.



Cat. No.	Description	Quantity	Unit of Measure
S23628	Globe - Writable	1	Each

Seasons Globe

Also known as the “The Reasons for the Seasons Globe”.

- Specifically designed to model the Earth's seasons
- Shows the exact location of day and night, with 24-hour meridians drawn on the globe's surface
- Useful for setting the time and date
- Features a smoked acrylic hood to aid in the day/night simulation
- Diameter: 6 in. (15.2 cm)



Cat. No.	Description	Quantity	Unit of Measure
S4536610	Seasons Globe	1	Each

Contour Map Making Kit

Learn how to read and make contour maps.

Easy to use

Includes:

- Plastic sheet
- Plastic mountain
- Plastic box dimensions (L x W x H): 12 x 6 x 3 in.



Cat. No.	Description	Quantity	Unit of Measure
S53005	Contour Map Making Kit	1	Each
S53005B	Contour Map Making Kit	15	Each

Geological Compass

Allows surface areas and linear measurements in space can be measured in one step.

- Angle is measured laterally on a vertical circle, and the direction is measured with an integrated Pendel clinometer
- Ideally suited to working in the field
- Delivery includes a leather bag with a belt clip, and a special tool to adjust the compass rose and the lid hinge
- Circular level, the mirror and the pelorus are also integrated
- Oscillation time of the magnetic needle: 30 to 60 seconds



Cat. No.	Description	Quantity	Unit of Measure
S20739	Geological Compass	1	Each

Eisco™ Plotting Compass with Glass Face

This plotting compass with glass face features a dial marked with principal points and features a glass face and aluminum case. It is a great option for students and is economically priced.

- Aluminum case with glass face
- Dial marked with principal points
- High accuracy and sturdy build



Cat. No.	Diameter (Metric) Inner	Quantity	Unit of Measure
S27744	100 mm	1	Each

United Scientific™ Liquid-Filled Compass

Durable liquid-filled compass housed in a black rotatable bezel.

- Durable, liquid-filled clear magnetic compass
- Housed in a black plastic rotatable bezel with an outside diameter of 45 mm
- Outer diameter of clear compass is 35 mm
- Graduated in 5° increments
- Includes a lanyard
- Grade 5+



Cat. No.	Description	Quantity	Unit of Measure
S43686	Compass, Liquid Filled	1	Each

United Scientific™ Mapping Compass

Explore the basics of navigation and orienteering with this easy-to-use compass.

- Features a sight finder, as well as markings in both the metric and English scales
- Map scale is displayed in mm with a ratio of 1:25,000
- Thickness when folded: 0.75 in. (1.9 cm)
- Length when folded: 3 in. (7.62 cm)
- Length when unfolded: 6 in. (15.24 cm)
- Width: 2 in. (5.08 cm)
- Compass diameter: 1.9 in. (4.83 cm)
- Grade: 5 to 12

Includes: Sight Finder and Detachable Lanyard



Cat. No.	Description	Quantity	Unit of Measure
S89564***	Mapping Compass	1	Each

Eisco™ Plotting Compass

Dial marked with principal compass points.

- Glass face
- Aluminum case
- Diameter: 0.6 in. (1.3 cm)



Cat. No.	Description	Quantity	Unit of Measure
S95977	Plotting Compass	10	Pack



Orienteering Compass

Basic, accurate compass to get started with map and compass work.

- Graduated in 2° increments and features four scales
- Black bezel with easy-to-read print
- Has liquid-filled capsule, declination correction scale, luminous points, and 4X magnifier in base
- Acrylic base offers scales in inches, centimeters, 1:25,000, and 1:50,000



Cat. No.	Description	Quantity	Unit of Measure
S96996	Orienteering Compass	1	Each

Meteorology

Environmental Chemistry: Acid Rain, Weathering and Erosion

See how rates of weathering and erosion may increase rapidly based on the material being exposed to acid precipitation.

- Acid rain describes any type of acidic moisture that can have devastating effects on not only aquatic ecosystems but also terrestrial areas
- Expose rock materials and metals, both naturally occurring and common in construction, to acidic environment
- Examine the reaction of these materials in contrast to the same materials exposed to "normal" rain (tap water)
- Grade: 7 to 14
- Class size: 15 students

COMPLIANCE: 49 CFR 173.4

⚠️ ALERTS: WARNING: This product can expose you to chemicals including Respirable Crystalline Silica and Strong Inorganic Acid Mists containing Sulfuric Acid, which are known to the State of California to cause cancer.



Cat. No.	Description	Quantity	Unit of Measure
S96398	Acid Rain, Weathering, and Erosion	1	Each

Acid Rain Study Outfit

Tools for testing the acidity of rain.

- Collect and measure precipitation and determine the pH levels of precipitation, ponds, lakes and streams with this complete outfit
- A valuable unit for an environmental science program
- Reagent refill available (S85000R)



Cat. No.	Description	Quantity	Unit of Measure
S85000	Acid Rain Study Outfit	1	Each

Weather Learning Guides

Perfect for Classroom Reference or Student Activities.

Weather & Climate Bulletin Board Activity Charts, Set of 3 (S13551)

- Includes 3 bulletin board activity charts: Earth's Atmosphere, Understanding Weather, and Weather & Climate
- Each bulletin board activity chart is laminated and double-sided with "write-on/wipe-off" activities
- Side 1 features a graphic overview of the topic
- Side 2 provides "write-on/wipe-off" activities

What is Weather? Flip Chart (S13534)

- Includes 10 laminated, double-sided flip charts with "write-on/wipe-off" exercises
- Mounted on 12 in. x 18 in. easel
- Teacher's Guide with copymasters of review exercises

What is Weather? Learning Guide (S13534S and S13896)

- Full-color, 36-page guide features self-directed readings, easy-to-follow illustrated explanations, guiding questions, inquiry-based activities, a lab investigation, key vocabulary review, and assessment review questions along with a post-test
- **Topics covered:** Thinking About Weather, Our Atmosphere, The Water Cycle, What is Weather?, Who Studies Weather?, Sky Condition, Types of Clouds, Precipitation, Humidity, Air Temperature, Air Pressure, and Wind Speed and Direction



Cat. No.	Description	Grade	Quantity	Unit of Measure
S13551	Weather & Climate Bulletin Board Activity Chart Set of 3	6 to 10	1	Each
S13534	What is Weather? Flip Chart	3 to 5	1	Each
S13534S	What is Weather? Learning Guide	3 to 5	1	Each
S13896	What is Weather? Learning Guide	3 to 5	10	Pack

Understanding Weather Learning Center

Engaging, ready-to-use learning centers for review of standards-based science skills.

- For learning essential grade-appropriate science skills
- Designed for teacher-directed instruction or independent student group learning
- Materials sufficient for up to four students
- Allows to use at classroom, after-school programs, or at home
- Includes one Curriculum Mastery Game featuring:
 - One set of 30 illustrated self-checking question cards
 - One laminated double-sided game board and game pieces for up to 4 players
- Four Visual Learning Guides focused on same topic
- Packed in zippered storage pouch
- Grades 6 to 12



Cat. No.	Description	Quantity	Unit of Measure
S24171	Understanding Weather Learning Center	1	Each

Climate, Atmosphere, and Weather Student Learning Guides with Online Lesson

Ideal blended learning solutions for use in the classroom or for remote learning/home study.

- Colorfully-illustrated student learning guide provides 36 pages featuring self-directed readings, easy-to-follow illustrated explanations, guiding questions, a lab investigation, key vocabulary review, and assessments
- Also includes one year access to a corresponding multimedia lesson for a teacher and all their students
- Each lesson features animated narrated tutorials, interactive exercises and activities, virtual lab investigations, illustrated narrated glossary, visual resource library, and an inquiry-based student activity guide
- Developed under sponsorship of the National Institutes of Health (NIH), the lessons are perfect for individual student instruction on any computer or tablet as well as classroom presentation on any interactive whiteboard
- Grade: 6 to 10

Atmosphere and Weather Student Learning Guide with Online Lesson (S436028)

- **Covers:** Our Atmosphere, Layers of the Atmosphere, Clouds, Precipitation, Weather, Weather Patterns, Air Masses, Weather Patterns, Fronts, Severe Weather, and Predicting Weather

Climate Student Learning Guide with Online Lesson (S436029)

- **Covers:** Climate and Its Causes, Seasons, Climate Zones and Biomes, The Tropical Zone, The Temperate Zone, The Polar Zone, Climate Change, Global Warming, and Ozone Depletion



NEW

Eisco™ 3 in 1 Weather Station

Measures temperature in Celsius, air pressure, and air moisture levels.

- Acts as a thermometer, barometer, and hygrometer
- Economically priced
- 5.12 in. diameter



Cat. No.	Description	Quantity	Unit of Measure
S27651	3 in 1 Weather Station	1	Each

United Scientific™ Rain Gauge

Portable rain gauge can be mounted on a wall or staked into the ground.

- The gauge measures up to 5 in. of rain fall
- Made from durable polystyrene
- The large clear increments are easy to read and the curved lens magnifies the look of the numbers and markings when rain is captured
- Dimensions (L x W x D): 12 x 2.7 x 1.5 in.

NEW



Cat. No.	Description	Quantity	Unit of Measure
S00330	Rain Gauge	1	Each

Healthcare Training and Education Supplies

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Find a range of tools to develop basic knowledge and learn advanced skills.

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fisherbrand Traceable™ Digital Barometer

Perfect unit for plants and labs to monitor barometric pressure, temperature, relative humidity, barometric pressure trend and time-of-day.

Fisherbrand Traceable Digital Barometer is ideal for use in environments where there is a need to monitor conditions of environmental air parameters.



- A four-line LCD continuously and simultaneously shows barometric pressure, temperature, relative humidity, barometric pressure trend and time
- Altitude adjustment: -100 to 2500 meters
- MIN/MAX readings for barometric pressure, temperature and relative humidity are stored every hour for the last 24 hours and are available for recall at the touch of a button
- Barometric pressure trend shows bar-chart format of the current and past 1/3/6/12 and 24 hour readings
- Computer output allows unit to be connected to a computer using the accessory Computer Data Acquisition System Software (sold separately, part number 14-650-118) to permanently capture the readings

Specifications

- Barometric Pressure Range: 500 to 1030mbar
- Barometric Pressure Resolution: 1mbar
- Barometric Pressure Accuracy: ± 4 mbar
- Temperature Range: 0° to 55°C (32° to 131°F)
- Temperature Resolution: 0.1°
- Temperature Accuracy: $\pm 0.4^\circ\text{C}$
- Relative Humidity Range: 5 to 95%
- Relative Humidity Resolution: 1% RH
- Relative Humidity Accuracy: $\pm 3\%$ RH between 5 to 75%, otherwise $\pm 5\%$ RH
- Dimensions: 10 x 7.6 x 2.5 cm (4 x 3 x 1 in.)
- Weight: 198g (7 oz.)

CERTIFICATION: An individually-numbered NIST Traceable™ Certificate is provided which assures accuracy from an ISO/IEC 17025:2005 calibration laboratory accredited by A2LA.

Cat. No.	Description	Quantity	Unit of Measure
S25098	Traceable Digital Barometer	1	Each

Eisco™ Aneroid Teaching Barometer

A high quality teaching barometer to demonstrate operation. The

exposed aneroid shows the change in barometric pressure when the attached bulb is pumped.

- 13 cm dial numbered in inches and millibars
- Includes a barometer with pump
- Range: 28 to 31 Hg (960 to 1060mbar)



Cat. No.	Description	Quantity	Unit of Measure
S23654	Aneroid Barometer	1	Each

fisherbrand Traceable™ Hand-Held Digital Barometer

A Barometer, altimeter, thermometer and time of day clock all in one.



- Rugged shock-resistant case, compact size, and lightweight
- Bar-chart format displays altitude or barometric pressure trends from previous 2, 4, 6, 8, 10, and 12 hours
- Clock displays the time of day in 12- or 24-hour format and shows date and month

Specifications:

- Barometer range: 15.90 to 31.01 in. Hg and from 400 to 1,070 mbar; accuracy: ± 0.2363 in. Hg (± 8 mbar)
- Altimeter range: -1,640 to +22,965 ft. (-500 to +7,000 m)
- Thermometer range: -40.0° to +70.0°C (-40.0° to +158.0°F); accuracy: $\pm 1^\circ\text{C}$
- Stopwatch Range: 1 second to 99 hours, 59 minutes, 59 seconds; accuracy is 0.01%
- Dimensions (L x W x D): 4 x 2.5 x 0.75 in. (10.2 x 6.35 x 1.9 cm)

CERTIFICATION: Individually serial-numbered Traceable Certificate is provided from an ISO 17025 calibration laboratory accredited by A2 LA. It indicates traceability to standards provided by NIST.

Cat. No.	Description	Quantity	Unit of Measure
S11150	Handheld Digital Barometer	1	Each

Eisco™ Small Anemometer

Simple device for elementary students to determine wind speed. It is simple for students to understand and use.

- Made of corrosive-resistant materials for prolonged outdoor use
- Cups are each mounted on horizontal arms which extends from the axis of rotation
- Includes one red cup and three blue cups
- Red cup is for determining the number of rotations
- Dimensions (L x W x H): 20 x 20 x 7.1 cm (7.9 x 7.9 x 2.8 in.)
- Weight: 0.3 kg (0.6 lb.)



Cat. No.	Description	Quantity	Unit of Measure
S23653	Small Anemometer	1	Each

Durac™ Compact Sling Psychrometer

Measures relative humidity with a weather bureau-type wet and dry bulb.

- Organic liquid-filled thermometers with white back glass are mounted in a pocket-sized self contained plastic case designed with a built-in slide rule
- The slide rule converts wet and dry bulb readings to relative humidity, eliminating the need to use calculating tables
- 5 Pieces



Cat. No.	Description	Quantity	Unit of Measure
S02692	Compact Sling Psychrometer	1	Each

United Scientific™ Sling Psychrometer

Use this simple apparatus to measure relative humidity.

- Includes two plastic-backed Celsius thermometers, one for dry bulb measurements and the other for wet bulb measurements
- The thermometers mount on a wooden handle so they can be spun to obtain temperature readings
- Includes an activity guide with relative humidity calculation table
- Grade: 5+

Note: requires assembly



Cat. No.	Description	Quantity	Unit of Measure
S23981	Sling Psychrometer	1	Each
S23982	Sling Psychrometer	15	Pack

Exploring Meteorology

This experiment provides students with the experience of being a meteorologist.

- Studies of pressure changes and creating a barometer
- Studies of wind speed and creating an anemometer
- Learn the skills to confidently read a weather map
- Includes a demonstration of how clouds form by allowing the instructor to form a vapor cloud
- Experiment includes material for 15 groups of 2 to perform the tasks
- Demonstration portion has enough material to perform the demonstration 5 times
- Disciplinary core ideas: ESS2.C; ESS2.D
- Performance expectations: MS- ESS2-5
- Cross cutting concepts: Cause and effect
- Engineering practices: planning and carrying out investigations
- Grade 7 to 14

COMPLIANCE: Aligned to the Next Generation Science Standards (NGSS)

DISCLAIMERS: Next Generation Science Standards is a registered trademark of Achieve. Neither Achieve nor the lead states and partners that developed the Next Generation Science Standards was involved in the production of, and does not endorse, this product.

Cat. No.	Description	Quantity	Unit of Measure
S40768	Exploring Meteorology	1	Each



Astronomy

Microslide™ – Introduction to Space

Microslide strip consists of images photographed through a microscope. Arrows and call outs help the student locate important features. This Microslide is accompanied by a detailed lesson plan to stimulate, inform, and question students.

Image titles on Microslide:

- The Moon
- The Sun
- Planets
- Meteoroids
- Comets
- Neighboring stars
- Our galaxy
- Other galaxies
- Lesson plan with pocket to store Microslide
- Reproducible worksheet with a purchase of 15



Cat. No.	Description	Quantity	Unit of Measure
S816727	Microslide – Introduction to Space	1	Each

United Scientific™ Earth Sun Planetarium

NEW

This Earth Sun Planetarium is a dynamic visual depiction of what happens to sunlight once it gets to earth.

- Demonstrate the rotational motion of Earth on its axis, its orbit around the Sun and the revolution of the moon around Earth with this high-quality model
- As the Sun casts a beam of light onto Earth (via an embedded LED), users can easily manipulate the positions of each body to examine how their dynamics correspond to seasons, eclipses, and lunar phases
- Languages: English
- Grade Level 6–14



Cat. No.	Description	Quantity	Unit of Measure
S111028	Earth Sun Planetarium	1	Each

Trippensee™ Chain-Driven Illuminated Planetarium

Model sun shines and casts shadows just like the real thing.

The sun, Earth, and moon models have synchronized motions while a model of Venus can be placed anywhere around the sun.

- Solar, lunar and annular eclipses demonstrated by a light in the sun
- Phases of the moon and seasonal changes are also illustrated
- Operates on 110VAC; instruction manual included
- Dimensions: 15 × 20 in.



Cat. No.	Description	Quantity	Unit of Measure
S45183	Sun, Earth, and Moon	1	Each

Sun, Moon, and Earth Orbiter Models

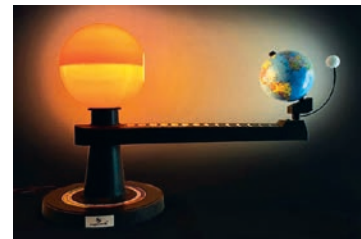
NEW

Understand the sun, moon, Earth and their relationships as they revolve around one another on these models.

- The sun, moon, and Earth manually revolve around one another on these gear-driven models.
- The Earth and moon are shown in true scale.
- The scale of the model is 1 inch equals 2,000 miles. Please note that if the sun were to be shown at the same scale, it would be approximately 36 feet in diameter.
- A detailed, 11-page instruction manual is included.
- Grade: 3+

Dimensions:

- 15 in. long arm
- Sun: 6 in. diameter
- Earth: 4 in. diameter
- Moon: 1 in. diameter



Cat. No.	Description	Power	Quantity	Unit of Measure
S816744	Basic Orbiter Model	—	1	Each
S816745	Illuminated Orbiter Model: Plug-in	Plugs into standard wall outlet	1	Each
S816746	Illuminated Orbiter Model: Battery Operated	4 AAA batteries	1	Each

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Celestial Globes

Create your own planetarium and study the stars. This globe is removable from the cradle and makes it easy to demonstrate Earth's apparent relationship to the stars, planets, and galaxies.

A perfect medium to introduce star activities to students, these unique 12 in. celestial globes have a 3.3 in. Earth globe inside. The sun may be set by adjusting the sun knob located near the North Pole. The globe can be set to reflect constellation position according to time and place to show the actual positions of the stars. The outer surface can be marked on and cleaned. This hands-on globe experience makes it more practical and fun to examine the universe.

- Globe-in-globe configuration
- Markable outer surface
- Easily washable
- Milky Way is depicted in white
- Stars are depicted in yellow
- Comes with 19-page activity book and 8-page study guide

Celestial Globe with Meridian Ring (S816747) additional features:

- Globe may be removed from cradle for closer view
- The meridian may be tilted to adjust the globe for latitude, while the horizon ring indicates the actual horizon in relation to the point of observation on Earth
- Mounted in full horizon and meridian base for stability

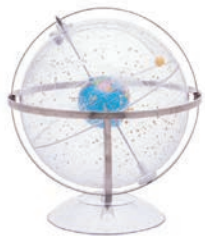
Cat. No.	Description	Quantity	Unit of Measure
S816747	Celestial Globe with Meridian Ring	1	Each
S816748	Basic Celestial Globe	1	Each

Eisco™ Sun, Earth, and Moon Orbital Model

Multiple moving axes on this gear driven model demonstrate daylight, night, seasons, and phases of the moon.

- Mechanical gear-driven model
- Multiple moving axes to demonstrate daylight, night, seasons and phases of the moon
- 12V light bulb inside sun demonstrates sunlight on moon and earth
- Base labeled with the months of the year and seasons for each hemisphere
- Requires 2 AA batteries, not included

Cat. No.	Description	Quantity	Unit of Measure
S12895	Sun, Earth, and Moon Orbital Model	1	Each



Eisco™ 17.5 in. Tall Celestial Star Globe

This model illustrates the Earth's rotation on its axis, and its revolution.

The globe shows the Milky Way, major stars in 3D, and constellations.

- Globe diameter: 12 in. (305 mm)
- Overall model height: 17.5 in. (445 mm)
- Detailed Earth globe is fitted inside the large star globe

Cat. No.	Description	Quantity	Unit of Measure
S12896	Celestial Sphere Kit	1	Each



United Scientific™ Celestial Star Globe

A demonstration device that shows the apparent positions of the stars visible from Earth.

The three dimensional representation allows the relative angular positions of the constellations to be visualized and permits students to estimate which stars will be visible from different places on Earth for any rotational position of the planet.

- Consists of two concentric spheres mounted on a common axle and supported on a frame with a base
- The inner sphere is 4 in. in diameter and represents the Earth. The continents are marked on it in their correct relative positions.
- The outer sphere is transparent. It is 12.5 in. in diameter and has the constellations and their stars marked on it. Yellow shading indicates the Milky Way, the plane of our galaxy.
- The axle that carries both spheres allows them to be rotated independently
- An angle scale is marked on the frame that supports the axle. The angles are marked every degree and extend from zero at the equator to 87° in both directions.
- The frame is fixed to a round base so that the axle is held at an angle of 23.5° to the vertical, representing the inclination of the Earth's spin axis to the axis of its orbit around the sun

Cat. No.	Description	Grade	Quantity	Unit of Measure
S89562***	Celestial Star Globe	5 to 12	1	Each



Moon Globe

Provides a full view of the moon regardless of its actual phase.

Developed under NASA's auspices, this globe displays numerous physical features present on the moon.

- Craters, seas and mountains create a 3-D look
- Cradle-mounted on a molded base
- Height: 15 in. (38.1 cm)
- Weight: 4.19 lb. (1.9 kg)

Cat. No.	Description	Quantity	Unit of Measure
S45211	Moon Globe	1	Each



Celestron™ StarSense Explorer™ Smartphone App-Enabled Telescopes

Compatible with most modern smartphones.

Celestron has reinvented the manual telescope with StarSense Explorer™ - the first telescope that uses your smartphone to analyze the night sky and calculate its position in real time. StarSense Explorer is ideal for beginners thanks to the app's user-friendly interface and detailed tutorials. It's like having your own personal tour guide of the night sky.

Dock, Launch, Explore

Leave complicated star charts, imprecise planetarium apps, and computerized mounts behind. With StarSense Explorer, locating objects has never been easier, faster, or more accurate. Within minutes of setting up the telescope, you'll be navigating the sky with confidence. Simply place your phone in the unique StarSense dock and launch the StarSense Explorer app. After aligning your phone to the telescope's optics (a quick, 2-minute procedure), StarSense Explorer generates a list of celestial objects currently visible. Make your selection and arrows appear onscreen, guiding you as you to move the telescope. When the object is ready to view, the bullseye turns green.

Smartphone Compatibility

StarSense Explorer™ works with most modern smartphones, including iPhone 6 and up and most devices running Android 7.1.2 or later manufactured since 2016. Compatibility will show when on home screen when app is launched.

Patent-Pending StarSense Sky Recognition Technology

StarSense Explorer™ uses patent-pending technology and your smartphone to determine exactly where the telescope is pointed in the night sky. A Lost in Space Algorithm (LISA), like the ones satellites use in orbit to correctly reorient themselves, helps the app match star patterns it detects overhead to its internal database. While other astronomy apps may claim that they can help you find objects, they rely exclusively on the

phone's gyros and accelerometers, which aren't as accurate as LISA technology. No other app can accurately tell you when your target is visible in the eyepiece.

Dazzling Views with High Quality Optics

You can expect sharp, bright views through this 80 mm refractor. Fully-coated glass optics provide increased light transmission, enhancing details in celestial objects. The telescope also includes a 90-degree erect image diagonal, so you can use it during the day to view birds, wildlife, landscapes, and more.

Perfect for the City or Dark Sky Sites

Even if you live in a light-polluted city location, StarSense Explorer™ is advanced enough to be able to pick out Jupiter, Saturn, Venus, the Orion Nebula, double stars, and a few more of the most famous celestial objects. But if you can take the telescope to an even slightly darker location, more objects will become visible. The entire telescope kit weighs just 9.2 pounds, so it's perfectly portable and easy to bring on your next camping trip, or to a remote observing site.

Everything You Need to Observe Immediately

When you unbox your new StarSense Explorer™ LT, you'll find:

- 80 mm refractor optical tube
- StarSense dock for your smartphone
- Low powered (25 mm) and high powered (10 mm) eyepiece
- 2x Barlow lens to double the power of each eyepiece
- 90-degree erect image diagonal
- StarPointer red dot finderscope, perfect for using the telescope during the day or without the StarSense Explorer app
- Altazimuth mount with slow motion control rod
- Full-height tripod with an accessory tray to keep you organized



Cat. No.	Optical Design	Model	Quantity	Unit of Measure
S81338	Refractor	LT 80AZ	1	Each
S81339	Newtonian Reflector	LT 114AZ	1	Each
S81340	Refractor	DX 102AZ	1	Each
S81341	Newtonian Reflector	DX 130AZ	1	Each

Celestron™ NexStar™ SLT Computerized Telescopes

Fully computerized hand control and a database of over 40,000 celestial objects.

- Fully computerized Altazimuth mount
- StarPointer finderscope to help with alignment and accurately locating objects
- Quick-release fork arm mount, optical tube, and accessory tray for quick, no-tool setup
- Sturdy stainless-steel tripod and accessory tray included
- Good for terrestrial and celestial observing
- SkyAlign allows you to align on any three bright celestial objects, making for a fast and easy alignment process
- Magnification: 26x, 72x



Cat. No.	Description	Quantity	Unit of Measure
S93981A	130 SLT Computerized Telescope	1	Each

Celestron™ NexStar™ 4SE Computerized Telescope

Ideal for observing and photographing the wonders of space.

StarBright XLT high-transmission coatings come standard on each model along with the StarPointer finderscope to help with alignment and accurately locating objects.

- Internal flip mirror for convenient viewing straight through (with optional diagonal) or at 90° (4 in. model only)
- Quick-release fork arm mount, optical tube and accessory tray for no-tool setup
- Sturdy computerized altazimuth mount
- Internal battery compartment to prevent cord wrap during use
- Ultra-sturdy steel tripod features built-in wedge allowing 4 in. model to be used for astrophotography
- Nearly 40,000-object database with 200 user-definable objects and expanded information on over 200 objects
- SkyAlign allows you to align on any three bright celestial objects, making for a fast and easy alignment process
- Aperture 102 mm (4 in.)



Cat. No.	Optical Design	Quantity	Unit of Measure
S93982	Maksutov-Cassegrain Telescope	1	Each

PowerSeeker Telescopes

A great way to open up the wonders of the universe to the aspiring astronomer.

- Aperture: 127 mm (5 in.)
- Focal Length: 1,000 mm
- Eyepieces: 20 mm (50X), 4 mm (250X)
- Coatings: Aluminum



Cat. No.	Description	Quantity	Unit of Measure
S98227C	PowerSeeker 127EQ	1	Each

Travel Scope Portable Telescope

Telescopes and tripods that fit inside a custom backpack for easy traveling and storage.

- All coated-glass optical elements for clear, crisp images
- Erect image diagonal so that your views are correctly oriented
- Smooth functioning altazimuth mount with easy pointing to located objects
- Preassembled aluminum full-size photographic tripod ensures a stable platform
- Quick and easy no-tool setup



Cat. No.	Description	Quantity	Unit of Measure
S01919	Travel Scope 70	1	Each

Celestron™ National Park Foundation Telescopes

Designed with travelers in mind, yet offer high-quality optical power.

TravelScope™ 60 (S81328)

- Designed with traveling in mind - offers high-quality performance at an exceptional value
- This refractor telescope is perfect for terrestrial and celestial viewing on the go
- Can view the planets, moon, star clusters and brighter deep sky objects like the Orion Nebula and Andromeda Galaxy at night
- Erect image star diagonal makes the optical tube ideal for using as a spotting scope during the day
- Adjustable tripod legs allow you to customize the telescope's height, or place it on raised surfaces like a picnic table

FirstScope (S81329)

- It doesn't get much simpler or more portable than the FirstScope's tabletop Dobsonian design
- The Newtonian reflector optical system features a spherical glass mirror with a generous 76 mm of aperture
- You'll get bright, sharp views of celestial objects and observe the Moon's mountains and craters in crisp detail
- Wide field of view allows for observation of the expansive views of the sky, which include open star clusters, or favorite deep sky objects like the Orion Nebula
- At just 4.3 lb. it is the perfect companion for any outdoor adventure

Cat. No.	Description	Quantity	Unit of Measure
S81328	Travel Scope™ 60 Telescope	1	Each
S81329	FirstScope Telescope	1	Each

Refracting Telescope Kit

Students make a working refracting telescope.

- This kit allows students to repeat Galileo's ground-breaking work, by constructing 16X refracting telescope.
- Along the way, students will be able to identify the elements of a simple refracting telescope, learn how lenses work, and be able to measure telescope magnification.
- No optical benches are required.

Cat. No.	Description	Quantity	Unit of Measure
S48823	Refracting Telescope Kit	10	Pack



Celestron™ SkyMaster 12X 60 mm Binocular

Features multi-coated optics and high index

BaK-4 prisms for adequate light transmission, increased contrast and resolution.

- 12X magnification porro prism binocular
- Large 60 mm objective lens offers maximum image brightness in low-light conditions
- Multi-Coated optics for sharp, clear views
- Suitable for terrestrial or astronomical viewing
- Protective rubber covering for ultra-firm grip
- Large center focus knob for easy focusing
- Tripod adaptable
- Long eye relief ideal for eyeglass wearers

Specifications:

- Exit pupil: 5 mm
- Eye relief: 17 mm
- Close focus: 18 m (59 ft.)
- IPD max: 56 mm
- IPD min: 72 mm
- Twilight factor: 27
- Relative brightness: 25
- Prisms: BaK-4
- Diameter (Metric) Lens: 60 mm

WARRANTY: Lifetime limited

Cat. No.	Description	Quantity	Unit of Measure
S14066	SkyMaster Binocular	1	Each



Hawk Binoculars for Kids

Great for students to use for exploring outdoor field trips.

- Ultra-deluxe 30 mm pair of field binoculars for students
- Durable, lightweight, easy for students to hold on their own
- For outdoor events, sports, bird watching, camping, and more

Cat. No.	Description	Quantity	Unit of Measure
S38810	Binoculars for Kids	1	Each



Celestron™ Kids 50 mm Newtonian Telescope



This great beginners' scope, with a unique STEM learning element—the side panel detaches so young scientists can explore the telescope's inner workings. It's great for the classroom and young amateur astronomers alike.



- When kids can understand how a telescope works, exploring the sky becomes that much more enjoyable. Simply remove the side panel and you'll be able to show off the telescope's mirrors and demonstrate how they capture light to produce an image in the eyepiece.
- When night falls, enjoy an evening of stargazing with this fully functional telescope. Explore the Moon, stars, planets.
- This Newtonian Reflector telescope comes with an easy to assemble tripod, which you can place on a table. You can also thread the optical tube directly onto a photographic tripod or monopod.
- With your purchase, you'll receive a free download of printable educational material about Sir Isaac Newton, the scientist who invented the Newtonian telescope, and an explanation of how light travels through the optical path. PLUS, enjoy a free Starry Night Special edition software download to teach your little one about the Universe (details on download code insert card included with your telescope).
- 50 mm Newtonian Reflector teaching telescope is great for astronomical viewing, and also includes a removable panel to show the telescope's inner workings
- Kids will learn about how light travels through a Newtonian telescope and the life of the telescope's designer, Sir Isaac Newton
- Easy assemble tripod included for stable viewing and easy transport

Cat. No.	Description	Quantity	Unit of Measure
S24644 ***	Kids 50 mm Newtonian Telescope	1	Each

Celestron™ NexYZ 3-Axis Universal Smartphone Adapter

Connects a smartphone to a telescope, spotting scope, binocular, monocular, and microscope, to capture images and video through the eyepiece.

Features:

- Works with a wide range of mobile phone models
- Features three directional knobs that perfectly align the phone camera with the eyepiece in seconds
- Stands up to rigorous field use thanks to its robust, durable construction with a metal frame and polymer body
- Fits any eyepiece from 35 mm to 60 mm in diameter including telescopes with 1.25 in. and 2 in. eyepieces, spotting scopes, monoculars, and binoculars
- Attaches to microscopes with the addition of the included adapter ring, taking the usable diameter down to 25 mm, the size of a standard microscope eyepiece
- Strong spring and a threaded twist lock provide a two-level strong and secure grip on the optical instrument's eyepiece to image with confidence
- Phone platform is fully adjustable to fit most devices, typically with the case on
- Secure platform stands up to the weight of heavier devices
- Spring-loaded clamps make it easy to quickly remove one device and replace it with another
- Switch image from portrait to landscape by turning the padded eyepiece clamp and readjusting the X, Y, and Z axis



Smartphone and microscope not included

Easy as X-Y-Z

- Three-axis adjustment gives users the power to place a phone on the platform, center it over the eyepiece with the X and Y knobs, and move up or down over the eyepiece until entire field of view is in the shot
- Adjustment is precise, quick and easy
- Switching phones, eyepieces, or optical instruments, only necessitates slight adjustments to re-center the camera over the new eyepiece

WARRANTY: 2 year

Cat. No.	Description	Quantity	Unit of Measure
S72453	Universal Telescope Smartphone Adapter	1	Each



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Environmental Science

Agricultural Science

Small Group Learning: Soil Analysis

Soil composition has been a keystone experiment in earth science classrooms

for many years. Our soil analysis kit will teach students the skills needed to properly conduct soil composition tests as well as allow them to collect and evaluate local soil samples.



- Using local soil samples helps students build a stronger connection to their local environment while building on a knowledge base that can be applied to any other environment
- Kit contains enough material for 5 groups
- Teacher's manual and student study guide copymasters are included
- Disciplinary core ideas: ESS2.A
- Performance expectations: MS-ESS2-1
- Cross cutting concepts: stability and change
- Engineering practices: developing and using models
- Grade: 7 to 14

Note: This learning activity requires a fume hood (sold separately)

COMPLIANCE: Aligned to the Next Generation Science Standards (NGSS)

Cat. No.	Description	Quantity	Unit of Measure
S40743	Soil Analysis Kit	1	Each

Determination of Dissolved Carbon Dioxide Concentration

The proper amount of dissolved carbon dioxide in water is critical for maintaining a healthy aquatic ecosystem. Use up to 40 tests to determine dissolved carbon dioxide concentration from a water source.



- All aquatic life has an impact on and is in turn impacted by the dissolved carbon dioxide concentration in a system, so tracking the concentration and changes in concentration can help scientists to better understand the health of an aquatic system and the organisms that exist within it.
- Includes Instructional manual and all necessary chemicals
- Class size: 40 students
- Grade 5+

Cat. No.	Description	Quantity	Unit of Measure
S139195*	Carbon Dioxide Concentration Kit	1	Each

Plant Tissue Macronutrients

Extract nutrients from plants of your choice and determine if nitrogen, phosphorus, and potassium are present in the plant sample.

- Plants need a variety of nutrients and minerals to grow and maintain overall health.
- Includes Instructional manual and all necessary chemicals
- Class size: 50 students
- Grade 5+



Cat. No.	Description	Quantity	Unit of Measure
S139196	Plant Tissue Macronutrients	1	Each

Estuary Monitoring Water Testing Kit

Test a water sample of your choice for coliform bacteria, chloride, dissolved oxygen, biochemical oxygen demand, nitrate, pH, phosphate, and temperature.

- Kit contains enough materials to perform 30 tests
- Includes Instructional manual and all necessary chemicals
- Class size: 30 students
- Grade 5+



Cat. No.	Description	Quantity	Unit of Measure
S139197***	Estuary Monitoring Kit	1	Each

Soil Macronutrient Testing Kit

Plants need a variety of nutrients and minerals to grow and maintain overall health. Extract nutrients from soil of your choice and determine if nitrogen, phosphorus, and potassium are present in the soil sample.

- Kit contains enough materials to perform 50 tests
- Includes Instructional manual and all necessary chemicals
- Class size: 50 students
- Grade 5+



Cat. No.	Description	Quantity	Unit of Measure
S139198***	Soil Macronutrient Kit	1	Each

Urban Water Investigation Kit

Test water sample for chloride, copper, iron, hardness, nitrate, pH, phosphates, and temperature.

- This kit will allow students to learn how water quality affects urban areas
- Kit contains enough materials for 10 tests
- Includes Instructional manual and all necessary chemicals
- Class size: 10 students
- Grade 5+



Cat. No.	Description	Quantity	Unit of Measure
S139199***	Urban Water Investigation Kit	1	Each

Total Water Investigation Kit

Test water sample for alkalinity, ammonia, biochemical oxygen demand, chloride, coliform bacteria, copper, hardness, iron, nitrate, dissolved oxygen, pH, and phosphate.

- This kit will allow students to learn about many different factors that affect water quality
- Kit contains enough materials for 10 tests
- Includes Instructional manual and all necessary chemicals
- Class size: 10 students
- Grade 5+



Cat. No.	Description	Quantity	Unit of Measure
S139200***	Water Investigation Kit	1	Each

The Carbon Cycle in Soil

In this activity, students will learn about the carbon cycle in soil and how soil impacts global warming.

- Changes in the carbon cycle and climate due to human activities have had detrimental effects on the environment. Through 3 different activities, students will investigate one cause of global warming, and the effects of a positive feedback loop.
- Includes Instructional manual and all necessary chemicals
- Class size: 15 lab groups
- Grade 5+



Cat. No.	Description	Quantity	Unit of Measure
S139201	Carbon Cycle in Soil	1	Each

Phenol Red pH Testing Kit

Test water pH within range 6.8 to 8.2 with this phenol red testing kit.

- Kit includes instructions and enough material to repeat the procedure over 50 times
- Includes Instructional manual and all necessary chemicals
- Class size: 50 students
- Grade 5+



Cat. No.	Description	Quantity	Unit of Measure
S139202	pH Testing Kit	1	Each

Green Chemistry: Detergents and the Environment

Understand the consequences of cultural nutrient overloading on the aquatic environment.

- Recognize that there may be environmentally-friendly alternatives in consumer chemical goods
- Demonstrate and monitor the effects of two detergent builders on natural water samples
- Visually quantify differences between phosphate and nonphosphate detergent builders on aquatic organisms
- Class size: 15 lab groups
- Grade: 7 to 14

COMPLIANCE: 49 CFR 173.4

Cat. No.	Description	Quantity	Unit of Measure
S96401*	Green Chemistry: Detergents and the Environment	1	Each



Environmental Chemistry: Nitrates, Phosphates, and Eutrophication

Understand the role of nitrates and phosphates in the process of eutrophication.

- After completing this lab, students should understand the difference between point source and nonpoint source pollution, and understand the role of nitrates and phosphates in the process of eutrophication
- Observe and examine the effects of nitrates, the effects of phosphates and the effects of a combination of nitrates and phosphates in miniature "ponds"
- Class size: 15 lab groups
- Grade: 7 to 14

Cat. No.	Description	Quantity	Unit of Measure
S96399*	Nitrates, Phosphates and Eutrophication	1	Each



Acid Rain and Environment: Acidity and Plant Grow Kit



In this activity, students will examine detrimental effects of acidic conditions on plants.

- Plants will be grown under normal soil conditions, mildly acidic soil conditions, and very acidic soil conditions
- students will determine if acidity has any impact on the growth of the plant
- Class size: 15 lab groups
- Grade: 7 to 14

COMPLIANCE: 49 CFR 173.4

Cat. No.	Description	Quantity	Unit of Measure
S05883	Plant Grow Kit	1	Each

Soil pH TestTabs Kit

Kit for measuring pH.



- Ideal for younger students and teachers who would like an alternative to liquid pH indicators
- Simple diagrammed instructions
- Laminated color chart
- 50 tests for pH
- Wide Range: 4 to 11 in 1.0pH units
- Distilled or deionized water recommended

Cat. No.	Description	Quantity	Unit of Measure
S98237	Soil pH TestTabs Kit	1	Each

Soil Texture Unit

For testing and demonstrating different soil textures and properties.

Test soil from schoolyard or samples brought from home and determine the percentage of sand, silt and clay.



Cat. No.	Description	Quantity	Unit of Measure
S85030	Soil Texture Unit	1	Each
S85030R	Reagent Refill	1	Each

Kemtec™ Soil Analysis Kit

Helps students gain hands on experience identifying, characterizing, and describing earth materials through seven experiments designed to determine texture, composition, particle size range, density, permeability, porosity, and pH.



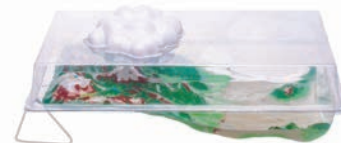
- Students learn how soils are formed, assess properties important in determining agricultural and commercial use, and discover characteristics important in assessing soil drainage, erosion, and fertility.
- Includes loam, silt, clay, sandy soil, topsoil, fine sand, coarse sand, and gravel for making classic comparisons.
- Additional soil samples may be used if desired.
- Includes sieve sets and all required supplies for testing, complete instructor's manual with worksheets, assessment materials, and answer keys.
- Packaged in a reusable plastic tote.
- Allow 4 to 5 hours of lab time to complete all experiments in the soils unit.
- Some experiments will require observation on subsequent days.
- Designed for 24 students working in groups of four.
- Balance recommended, not included.
- Meets National Standards for Grade Levels 7 to 12.

Cat. No.	Description	Quantity	Unit of Measure
S27532	Soil Analysis Kit	1	Each

Water Cycle Model in Action



Make it rain in your classroom. Students can duplicate the individual processes of the water cycle (evaporation condensation and precipitation) with this ingenious model.



- This hands-on model will keep kids interested in learning about evaporation, condensation and precipitation.
- Requires a heat lamp (not included)
- Ages 9+

Parts included in this product:

- Vacuum formed model with cover - 17 x 12.5 x 5 in.
- Wire stand
- Cloud (ice holder)
- Ten - 8 x 11 in. full color study cards
- Companion guide

Cat. No.	Description	Quantity	Unit of Measure
S89526	Water Cycle Model in Action	1	Each

The Field Explorer Kit

Inspiring Kit for the budding outdoor scientists! The Field Explorer Kit sends you on your way for a perfect field trip by offering all the companion components you will need, including a journal to record all that you find!

- Perfect field trip companion
 - Size: 16 x 12 x 8 in.
 - Ages 7+
 - Grade 1
- Backpack filled with:**
- 20X stereo microscope, battery operated
 - Large insect net with telescoping handle
 - Aqua net
 - Bug viewer with a measurement grid
 - Hand-held magnifier
 - Collection tube
 - 35 mm petri dishes (3)
 - Forceps
 - Pencil
 - Compass
 - Blank journal

NEW



Cat. No.	Description	Quantity	Unit of Measure
S89528	Field Explorer Kit	1	Each

Classroom Aquaponics

Engages students in ecology, biology, earth systems, math, history and literature, while pairing fish and plants in one integrated system.

- Educator can instruct on growing vegetables sustainably, germination rates, fish anatomy and nitrogen cycle
- All acrylic construction is safer than glass for classroom use
- Aquarium covers keep fish from jumping out and reduce evaporation



Cat. No.	Description	Quantity	Unit of Measure
S12802	Aquaponics System	1	Each

Soil NPK Test Kit

Unit dose tablet test for soil macronutrients.

- Simple diagrammed instructions and laminated color chart
- 50 tests each for nitrogen, phosphorus and potassium in soil
- Originally developed for the GLOBE program
- Test results for available nutrients listed as low, medium, and high, with approximations for lb/acre.



Cat. No.	Description	Quantity	Unit of Measure
S65951	Soil NPK Test Kit	1	Each

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Teaching Case, Soil Analysis, VISOCOLOR™

Can be used to reliably identify important soil parameters without prior knowledge of chemistry.

- Identify the concentrations of the following substances in the soil: nitrate, nitrite, ammonium, phosphate and potassium
- Determine soil structure, acidity (pH value), density and humidity
- ID cards can be used to make color comparisons to a high level of accuracy
- Can be used in the classroom
- Thorough introduction in English, French, Spanish and German



Cat. No.	Description	Quantity	Unit of Measure
S20744	Soil Analysis Case	1	Each

Soil Sampling Tube

Easy-to-use, easy-to-clean, galvanized-steel sampling tube.

- Collects soil samples from a depth of up to 12 in. (30.5 cm)
- Cutaway viewing window for inspection of soil stratification 9.75 in. (25 cm)
- Soil core (D x L): 1 x 11.75 in. (2.5 x 30 cm)



Cat. No.	Description	Quantity	Unit of Measure
S45110	Soil Sampling Tube	1	Each

Soil Macronutrients Test Kit

Make detailed evaluations of soil composition.

- Soil analysis outfit includes all of the materials needed for accurate and detailed soil evaluation
- Determines soil pH, nitrogen, phosphorus, potassium content and soil texture
- Each self-contained, individual module contains the necessary materials and equipment to conduct 50 tests
- All components are contained in a specially designed, rugged carrying case
- Includes the *LaMotte Soil Handbook* and downloadable free resource, *A Study of Soil Science*
- Grade 6



Octa Slide Comparator

- Test Factor: pH (40 tests)
- Range: 3.8-9.6

Color Chart

- Test Factor: Nitrogen / Phosphorus (50 tests ea.)
- Range: 10-150 lb/acre / 10-200 lb/acre

Turbidity Column

- Test Factor: Potassium (30 tests)
- Range: 100-400 lb./acre

Cat. No.	Description	Quantity	Unit of Measure
S17704	Soil Macronutrients Test Kit	1	Each

Eisco™ Ganong's Potometer with Glass Stopcock

Students will learn how to measure the rate of water uptake of a leafy shoot during transpiration or photosynthesis.

- For demonstration of transpiration rates and rates of water absorption by a cut shoot under various external conditions
- Made from high-quality borosilicate glass
- Mounted on wooden base by clips
- Base, approximately 12.25 in. wide
- Height to top of reservoir is approximately 6.5 in.
- Reservoir Diameter is approximately 0.75 in.
- Capillary bore diameter is 1 mm
- Instruction manual included

WARRANTY: 1 year limited manufacturer

Cat. No.	Description	Quantity	Unit of Measure
S29355	Ganong Potometer	1	Each



Eisco™ H Type Potometer

Suitable for individual student use to measure the uptake of water by a leafy shoot during conditions that cause transpiration or photosynthesis.

- H Type potometer for measuring rate of water uptake by a leafy shoot
- Cut shoot is attached to the side arm with tubing and the wide glass tube acts as the reservoir
- Made from high-quality borosilicate glass
- Reservoir tube measures 6 in. long, 3 in. wide with side arm
- Capillary tube measures 7 in.
- Great for individual student use

WARRANTY: 1 year limited manufacturer

Cat. No.	Description	Material	Quantity	Unit of Measure
S29356	H Type Potometer	Glass, Rubber	1	Each



fisherbrand Soil Analysis ASTM Hydrometers

These hydrometers are used to determine the specific gravity of soil in the range of 0.995 to 1.038 or -5 to 60g/L (using a weight by volume scale).

- 280 mm (11 in.) long
- Lead-free ballast and glass
- Individually serialized
- Conform to the accuracy requirements of ASTM hydrometers
- Temperature standardization: 68°F

Storage:

Soil analysis hydrometers should be stored in a clean, dry, safe place, and should not be subjected to extreme temperatures.

CERTIFICATION: Packaged with a multi-language (English, French, German, Italian, Portuguese, and Spanish) Statement of Accuracy indicating accuracy traceable to NIST. Hand Inspected by our U.S. quality team.

Cat. No.	ASTM Number	Specific Gravity Range	Quantity	Unit of Measure
13-202-133	152H	-5 to 60 g/L	1	Each
13-202-132	151H	0.995 to 1.038	1	Each



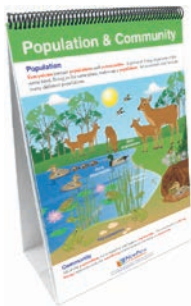
Ecology & Pollution

What Are Ecosystems Flip Chart

Graphically introduce, practice and review key-standards-based concepts.

Includes:

- 10 laminated, double-sided flip charts with "Write-On/Wipe-Off" exercises
- Mounted on 12 x 18 in. easel
- Teacher's guide with copymasters of review exercises
- Grades 3 – 5



Cat. No.	Description	Quantity	Unit of Measure
S13531	Ecosystem Flip Chart Set	1	Each

Ocean Acidification Educational Kit

Provides three different activities that allow students to investigate the cause of ocean acidification, and the effects it can have on the ecosystem and marine life.

- Changes to the carbon cycle and climate due to human activities have had detrimental effects on the environment
- One example of this is known as ocean acidification, which is the changing of the ocean's chemistry due to increased carbon dioxide in the atmosphere and ocean

Features:

- In this activity, students will learn about the carbon cycle and how it relates to ocean acidification
- Through three different activities, students will investigate the cause of ocean acidification, and the effects it can have on the ecosystem and marine life
- Kit contains enough materials for 15 groups of students
- Teacher's manual and student study guide copymasters are included
- Grade: High School



Cat. No.	Description	Quantity	Unit of Measure
S802492	Ocean Acidification	1	Each

Kemtec™ Ocean Science Kit

Examine physical and chemical properties of seawater and learn how these properties affect ocean currents and environments.

Students determine the effects of three scenarios on the surrounding water and land environments and inhabitants: 1) a new dam being built on a large river that flows into a bay, 2) melting of the polar ice cap, and 3) a global temperature drop to 0°C and present their conclusions in a panel discussion.

- Visualize convection currents while tracking effects of density, temperature, pressure and salinity
- Learn effects of sun heat, precipitation, evaporation, freezing and thawing of sea ice and influx of fresh water from rivers
- Link science and technology to local, national, and global changes
- Class size: 24 students
- Grades 5 to 9

⚠️ ALERTS: Choking hazard (1) Small parts. Not for children under 3 yrs.



Cat. No.	Description	Quantity	Unit of Measure
S94962	Ocean Science Kit	1	Each

Microslide™ – Ecology Under Microscope

Microslide strip consists of images photographed through a microscope.

- Arrows and call outs help the student locate features

Image titles on Microslide:

- Algae/diatom(200x)/pediastrium (200x)
- Protozoa/blepharisma (200x)/suctorian (200x)
- Starfish embryos (200x)
- Arthropods cyclops (10x)
- Nematodes (40x)
- Virus on *E. coli* (60,000x)
- Fungi (200x)
- Bacteria (400x)

Includes:

- Lesson plan designed to stimulate, inform, and question students
- A pocket to store Microslide
- Reproducible worksheet with a purchase of 15



Cat. No.	Description	Quantity	Unit of Measure
S816723	Microslide – Ecology Under Microscope	1	Each

Deluxe Stream Table with Pump

With an integrated design, setup is a breeze — simply add water, turn on the pump and teach.

Stream tables are an essential part of the earth sciences class for the study of erosion, sediment deposition and the behavior of rivers and lakes. Use them to unfold these processes inside the classroom at an accelerated rate — easier than observing a real river over the course of decades.

Features:

- Rugged plastic construction
- Features five water jets
- One water jet yields one stream, while many jets form tributaries that form rivers
- Integrated reservoir with sediment trap prevents particulates from clogging the pump
- Clear acrylic sides allow views of sediment layers
- Integrated prop holds the table at several angles
- Removable dam creates a lake to illustrate how sediments form deltas
- Fully watertight
- Folds for storage
- Dimensions: 48 x 20 in. (122 x 50.8 cm)

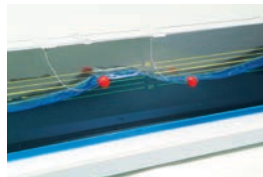


Cat. No.	Description	Quantity	Unit of Measure
S06669	Stream Table	1	Each

Wave Channel for Water

Investigate the wave properties of water.

- Y-shaped channel made of Plexiglas™ plastic with two wave exciters
- Use for both in-phase and antiphase mode
- Adjustable frequency permits wave generation with varying wavelengths
- Waves can be either absorbed or reflected by inserting or removing the absorber at the end of the channel
- Dimensions: 59 x 5.9 x 11.4 in. (150 x 15 x 29 cm)
- Weight: approx. 27.8 lb. (12.6 kg)



Cat. No.	Description	Quantity	Unit of Measure
S90356	Wave Channel for Water	1	Each

Water Cycle Model

This 3D model will show upper level of an underground surface in which soil or rock is permanently saturated with water.

- 3D Water Cycle Model
- The water table separates the underground water zone from the capillary fringe or zone of aeration



Cat. No.	Description	Quantity	Unit of Measure
S81680	Water Cycle Model	1	Each

Kemtec™ Environmental Extremes Kit Plus

Introduces students to environmental studies through the creation of their own soil erosion model.

- Simulate the conditions of acid rain, saline soils, drought, and erosion
- Uses plant growth models and soil erosion models
- Includes extended erosion activities featuring cost analysis
- Introduce students to scientific process through nine detailed experiments
- Students design their own experiments once familiar with experimental protocols, data collection, and data analysis
- Ideal for biology, agriculture, or general science courses
- Includes pH meters and digital scales
- Acids are not included
- Grade: 6 to 12
- Dimensions (L x W x H): 27 x 27 x 21 in.
- Class size: 24 students



Cat. No.	Description	Quantity	Unit of Measure
S30829	Environmental Studies	1	Each



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Water Cycle 3D Model Kit

Assemble and use 3D models to visualize and investigate key science structures.

- Gain a critical understanding of complex structures and processes through the assembly of 3-dimensional models
- Kit includes enough materials for students to assemble up to 10 paper models by working either independently or cooperatively in small groups
- Also includes comprehensive Teacher Resource Guide outlining opportunities for your students to engage, explore, explain, extend, and evaluate their understanding of key scientific concepts
- Satisfies NGSS Standards which encourage students to develop and use models to represent structures, systems, and processes, then provide explanations, make predictions or investigate solutions
- Perfect for use in the classroom, lab or at home
- Grade: 6 to 10



Cat. No.	Description	Quantity	Unit of Measure
S81486	Water Cycle 3-D Model	1	Each

Water Treatment and Filtration

Develop a knowledge of the processes performed at a water treatment plant and understand the reasons for each.

- Use "polluted" water to perform several small-scale procedures that occur in a water treatment plant
- Examine the changes in the water after each treatment step is performed
- Observe physical characteristics of water, such as clarity, color, odor, and how each is affected from the beginning of the treatment process until the end
- Sufficient for 15 students



Cat. No.	Description	Quantity	Unit of Measure
S97623*	Water Treatment and Filtration Kit	1	Each

Water Pollution Kit

For detecting water pollution in aquatic environments.

Water Pollution 1 Kit

- Examines water quality in suspected or known polluted aquatic environments
- Contains individual test modules for 11 key test factors: dissolved oxygen, chlorine, pH, nitrate-nitrogen, phosphate, ammonia-nitrogen and temperature
- With complete instructions and reagents to perform 50 tests for each factor
- Grades 5+

Includes: A field tote and free downloadable handbooks and teacher resources



Cat. No.	Description	Quantity	Unit of Measure
S04351	Water Pollution Kit I	1	Each

Kemtec™ Ocean Trash Can Kit

Study effects of pollution on ocean, its inhabitants and surrounding coastline.

This exercise examines various types of pollutants, their sources, and their effects on the ocean, its inhabitants and the surrounding coastline.

- Students classify ocean pollution into five basic categories: debris, toxins, dissolved nutrients, particulates and oil
- Activities include: effect of pH of liquids on calcium carbonate, effects of dilution, buffering capacity, salt and acid runoff, acid rain; ability of water to purify itself, and oil spill clean-up
- Students design and write newsletter containing articles with pertinent pollution topics such as current laws, pollution, effects, bioaccumulation and prevention
- Requires four class periods plus research time
- Grades 7 to 10
- Class size: 24 students

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.



Cat. No.	Description	Quantity	Unit of Measure
S94963	Ocean Trash Can Kit	1	Each

Kemtec™ Oil Spill Junior Kit

Teaches young students about basic oil containment and removal techniques.

- Students can experience how engineers and scientists approach oil spill disasters
- Explore the physical and chemical properties of oil
- Use models to simulate basic oil containment and removal techniques
- Learn to measure data and compare results
- Enhances understanding of scientific process, establishes problem solving skills, and explores inquiry based learning
- Includes multiple sets of worksheets for differentiated K-1, 2-3 and 4-5 learning levels
- The perfect hands on activity to pair with your favorite elementary level oil spill book
- Supports Next Generation Science Standards K-2-ETS1-2, Engineering Design & 3-5-ETS1, Engineering Design and Structure and Properties of Matter, 2-PS1-1 & 2-PS1-2
- Class size: 32 students



Cat. No.	Description	Quantity	Unit of Measure
S30831	Oil Spill Junior Kit	1	Each



Fisher Science Education™ Environmental Engineering Oil Spill Management Kit

Hands-on oil spill awareness and cleanup kit designed for grades 7 to 12.



Students simulate deep-ocean and beach crude oil spills as they engage in the work of an environmental engineering team. Students will use models to learn the physical and chemical properties of oil and experience how scientists respond to oil spill disasters.

- Teaches environmental impact, basic oil biology, micelle structures, and chemistry concepts such as hydrophobic and hydrophilic interactions
- Students simulate basic oil containment and removal techniques using their own oil spill models
- Includes a quantitative analysis of absorbent materials, hands on skimming and dispersant activities, and an experimental introduction to concept of bioremediation
- Students work as team to research and systematically design oil spill solution, use iterative cycle to improve their solutions, and learn to argue their points of view
- Great for applying knowledge and teaching higher order thinking skills including creative thinking, reasoning, decision making and problem solving
- Plan to spend several weeks on unit
- Class size: 24 students

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S02643	Oil Spill Kit	1	Each

Water Testing

Digital Tapwater Tour Kit

A classroom investigation of how and why the characteristics of tap water can vary and affect every day activities.



- The instructor manual includes background information, set up, and shopping list
- Student Manual including test procedures, data sheets and puzzles
- Students work in groups and individually
- Works on computers or tablets
- Great for inclusion classrooms
- Refill includes reagents and sample bags for 50 students
- Grade: 4 to 8

Cat. No.	Description	Quantity	Unit of Measure
S72761	Digital Tapwater Tour Kit	1	Each
S72762	Refill for Digital Tapwater Tour Kit	1	Each

Small Group Learning: Water Treatment And Filtration



Students will develop a knowledge of the processes performed at a water treatment plant and understand the reasons for each process by performing, on a small-scale, several of the procedures that occur in a water treatment plant on simulated polluted water.

- Students will examine the changes in the water after each treatment step is performed, observe physical characteristics of water, such as clarity, color, odor, and note how the characteristics are affected from the beginning of the treatment process until the end
- Kit contains enough material for 5 groups
- Teacher's Manual and Student Study Guide copymasters are included
- Disciplinary Core Ideas: PS1.A; PS1.B
- Performance Expectations: MS-PS1-2; HS-PS1-3
- Cross Cutting Concepts: Patterns
- Engineering Practices: Analyzing and Interpreting Data; Planning and Carrying Out Investigations
- Grade: 7 to 14

COMPLIANCE: Aligned to the Next Generation Science Standards (NGSS)

Cat. No.	Description	Quantity	Unit of Measure
S40757*	Water Treatment and Filtration	1	Each

Environmental Testing Kit

Teaches students how environmental scientists study pollution by collecting, and testing samples from their local community.

- Learn how environmental scientists study pollution by testing air and water samples from your local area!
- This kit includes nine different tests to determine the air and water quality of samples collected from the community
- Investigate water quality by testing for dissolved oxygen levels, water hardness, pH, phosphate, and chloride content
- Additionally, test for particulate and chemical pollutants in the air, measure smoke density, and learn how excess carbon dioxide in air affects the environment
- Teacher's Manual and Student Worksheets included
- Materials provided accommodate a class of 30 working in groups
- Grade: 7 to 14



Cat. No.	Description	Quantity	Unit of Measure
S27134***	Environmental Testing Kit	1	Each

United Scientific™ Water Sampler

Students learn how to capture water samples from specific depths.

- A unique design allows for hassle-free sample collection: when the desired depth is reached, students simply jerk the attached line to close the apparatus.
- Includes PVC collection tube, rubber seals and quick-release pin, Styrofoam winding float with 20 m line
- Made from impact-resistant PVC, with soft rubber seals that hold up to 1.5 liters of liquid
- Unit is 30 cm long, 10 cm in diameter and weighs 2 pounds
- Activity guide included



Cat. No.	Description	Quantity	Unit of Measure
S89538***	Water Sampler	1	Each

Edvotek™ Water Quality Testing I: Chromogenic Analysis of Water Bacteria Contaminants

Students will test for coliforms in simulated contaminated water, and can test water samples from the environment.

- Safe drinking water is vitally important to health. Both pathogenic and harmless bacteria can be found in the guts of mammals and birds. Presence of coliforms in water is an indicator of fecal contamination.
- Testing for coliforms, including *E. coli*, using color and fluorescent reagents
- Extension activity includes Gram Stain test that can be performed on the collected samples
- Test duration: complete in 30 minutes and grow overnight
- Class size: 10 lab groups



Cat. No.	Description	Quantity	Unit of Measure
S68636	Water Quality Testing	1	Each

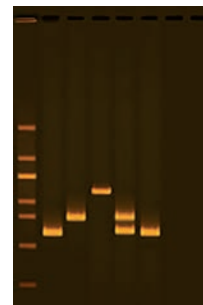
Edvotek™ Water Quality Testing III: Multiplexed PCR for Testing Water Bacteria

Students will investigate the presence of contaminants in a water sample.

- Drinking water is routinely tested for contamination. If a screening tests positive, more sophisticated tests are required to determine whether harmful microbes are present.
- Students use PCR in multiplex format
- Single PCR test detects presence of three separate, classroom-safe organisms
- Analyzed on agarose gels
- Sufficient for 25 students

Experiment times:

- Setup: 60 minutes
- PCR: 120 minutes or overnight
- Electrophoresis: 45 minutes



Cat. No.	Description	Quantity	Unit of Measure
S95132	Water Quality Testing III	1	Each



Water Quality Educator and Monitoring Outfit

Ideal for long-term water-quality monitoring.

- Tests for seven basic water-quality test factors
- Prepares students for field tests or classroom work
- Set up a water-quality monitoring program, procure measurements, and interpret results
- A Soft-sided tote made of durable fabric, solid rubber bottom ready for field work; handy side pockets hold thermometer, pens, writing tablets, and other tools

Includes:

- *The Monitor's Handbook* (71 pages)
- 100 tests for pH
- 50 tests for the following five factors: nitrate-nitrogen, phosphate, dissolved oxygen, total alkalinity, turbidity, unlimited temperature tests, aquatic macroinvertebrate bioassessment
- Lesson plans for grades 5 to 8 and 9 to 12



Cat. No.	Description	Quantity	Unit of Measure
S66223	Water Quality Educator and Monitoring Outfit	1	Each

Earth Force™ Low-Cost Water Monitoring Kit

Learn the basics of water quality monitoring and testing.

- Analyze sample water for pH, dissolved oxygen, biochemical oxygen demand, temperature, turbidity, nitrate, phosphate and coliform bacteria
- Each nonhazardous, TesTabs™ reagent tests 10 water samples (three samples for coliform)
- Grade 4+



Cat. No.	Description	Quantity	Unit of Measure
S65401***	Water Monitoring Kit	1	Each

Earth Force™ Low-Cost Estuary Monitoring Kit

Simple, nonhazardous methods to test saline and brackish waters found in estuaries.

- Test water samples for coliform bacteria, salinity, dissolved oxygen, nitrate, pH, phosphate, temperature and turbidity
- Supplied with all TesTabs™ reagents and components to test 10 water samples (two samples for coliform)



Cat. No.	Description	Quantity	Unit of Measure
S65403***	Green Low Cost Estuary Kit	1	Each

Fresh Water Test Kit

Teaches sampling techniques, careful measurement and data recording.

- Combines limnology with a water testing kit
- Tests for dissolved oxygen, carbon dioxide, nitrates, phosphates, silica, pH, calcium, magnesium and total hardness
- Soft-side tote is made of durable fabric and a solid plastic bottom ready for field work
- Handy side pockets hold thermometers, pens, writing tablets, and other tools
- Grades 5+

Includes:

- Six individual cases that house components needed for various chemical tests
- Sampling bottles
- Free downloadable handbooks and teacher resources
- Analysis report forms
- 50 tests per factor, except nitrate (40) and pH (100)



Cat. No.	Description	Quantity	Unit of Measure
S45078	Fresh Water Test Kit	1	Each

AM-12 TesTabs™ Water Investigation

Test water quality as a complete experiment or in addition to other water studies.

- Measures water quality with 12 TesTabs reagents
- Uses easy-to-perform, nonhazardous TesTabs
- Flashcards inform about each test factor, describe the chemical reaction and explain the chemical influence on the environment
- To use: fill tube with water, add necessary tablets, shake tube until each tablet fully dissolves and compare resulting color to the color chart
- Grade 5+

Includes: Test Modules for Alkalinity, Ammonia, Chloride, Chlorine, Chromium, Copper, Dissolved Oxygen/BOD, Hardness, Iron, Nitrate, pH, and Phosphate



Cat. No.	Description	Quantity	Unit of Measure
S66982	AM-12 TesTabs Water Investigation	1	Each

Urban Water Quality Test Kit

Introduces water chemistry concepts in urban areas.

- Introduces water chemistry concepts in areas where the lifestyle does not often include involvement in outdoor activities, or contact with nature
- Helps urban students understand that environmental issues are a part of their world, and issues involving water chemistry are all around them
- Employs methods suitable for testing drinking water, runoff and street puddles
- Tests for chlorine, copper, iron, hardness, nitrate, pH, phosphates, dissolved oxygen, coliform and temperature using nonhazardous TestTabs™
- Grade: 3+

Includes: Materials for 10 tests for each factor, comprehensive handbook, all necessary equipment



Cat. No.	Description	Quantity	Unit of Measure
S66226***	Urban Water Quality Test Kit	1	Each

Vernier Science Education™ Colorimeter

For Beer's law experiments to determine concentration of unknown solutions, or studying changes in concentration vs. time.

- 4-wavelength colorimeter measures amount of light transmitted through sample at user-selectable wavelength in order to determine concentration of solution
- Features automatic sensor identification and one-step calibration
- Transfer function: $V_{out} = 0.035 \times (\%T) + 0$
- Power up time: 700ms (maximum)



Cat. No.	Description	Quantity	Unit of Measure
S16008ND	Colorimeter	1	Each

SMART 3™ Colorimeter Water Quality Analyzer

Multitest colorimeter measures numerous water quality parameters with laboratory accuracy and convenience of a portable, hand-held system.

Captures up to 500 date- and time-stamped data points with the datalogger, then download via USB connection.

- Compact unit with large, backlit display
- More than 80 pre-programmed tests
- Automatic wavelength selection
- Menu-driven operation
- Accepts COD vials and cuvetts
- Waterproof to IP67
- Seven languages — user selectable
- USB port and cable for downloading results and charging
- Multiple LED optical system
- Option of entering up to 25 additional calibrations for analysis with custom reagent systems

CERTIFICATION: CE, EPA

WARRANTY: 2 year



Cat. No.	Description	Quantity	Unit of Measure
S66155A	Colorimeter Water Quality Analyzer	1	Each

Wide Range pH Test Kit

This kit tests for pH using the Octa-Slide 2 Comparator with two color bars. Covers a wide pH range from 3.0 - 10.5 pH.

Simply fill the tube to the mark with sample water, add several drops of indicator, and compare the resulting color against the permanent color standards.

- Range: 3.0 to 10.5
- Sensitivity: 0.5
- 100 tests

Includes: Octa-Slide 2 Comparator, graduated test tubes and a bottle of wide range indicator



Cat. No.	Description	Quantity	Unit of Measure
S96703***	pH Test Kit	1	Each



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Turbidity Test Kit

This visual comparison test kit is designed for use in shallow waters where Secchi disc depth reading is not feasible.

- Readings are made by using a standard turbidity reagent to match the turbidity of a water sample
- Measurements are expressed in Jackson Turbidity Units (JTU)
- Reads from 0-200 JTU in 5 JTU steps
- Number of tests: 50



Cat. No.	Description	Quantity	Unit of Measure
S65414***	Turbidity Test Kit	1	Each

Eisco™ Transparent Turbidity Tube

Determines transparency of water in lakes, streams, and oceans.

- Contains clear tube with small Secchi disc of alternating black and white quadrant
- Provides quick and easy way to probe turbidity, which is measure of clarity of water, which is in turn is related to amount of sediments or pollutants in water
- Length (Metric): 1 m



Cat. No.	Description	Quantity	Unit of Measure
S12998	Turbidity Tube	1	Each

Test Tubes, Turbidity

Replacement test tubes for use in LaMotte Turbidity Meters.

- Sample vial for turbidity measurements, 10 mL line
- 6 vials/pk
- Material: Glass



Cat. No.	Description	Quantity	Unit of Measure
S72729	Turbidity Measurements	1	Pack

Dissolved Oxygen Kit

Learn how to conduct oxygen-level tests for plants and animals.

- Direct-reading titrator test measures levels of oxygen
- Indicates whether a body of water can sustain healthy aquatic plants and animals
- Low oxygen levels signal contamination from organic wastes
- Measures 0 to 10ppm in 0.2ppm increments
- Azide modification of Winkler method
- Grade: 5 to 12



Dissolved Oxygen Kit includes:

- 30 mL manganous sulfate solution
- 30 mL alkaline potassium iodide azide
- 30 mL sulfuric acid
- 60 mL 0.025N sodium thiosulfate
- 30 mL starch indicator solution
- Direct reading titrator
- Glass test tube with cap 5-10-12.9-15-20-25 mL
- 60 mL Water sampling glass bottle

Dissolved Oxygen Kit Reagent Refill includes:

- Five reagents; makes 50 tests at 10ppm

Cat. No.	Description	Quantity	Unit of Measure
S94979	Dissolved Oxygen Kit	1	Each
S81623	Dissolved Oxygen/BOD Testab™ Module	1	Each
S45088R***	Dissolved Oxygen Kit Reagent Refill, 5 Reagents	1	Each

Nitrate-Nitrogen Kit

Colorimetric test system.

- Range: 0 to 15ppm
- Sensitivity: 1.0ppm
- Number of Tests: 50



Cat. No.	Description	Quantity	Unit of Measure
S65410***	Nitrate Nitrogen Tablet Test Kit	1	Each
S65411***	Reagent Refill Test Kit	1	Each

10 mL Square Test Tube

For use with LaMotte™ water quality monitoring kits.

- 10 mL square test tube with cap



Cat. No.	Description	Material	Quantity	Unit of Measure
S72378***	Test Tube	Plastic	1	Each

Insta-Test™ Single and Multi-Factor Test Strips

For water quality testing.

- No reagents or field kits required for most strips
- Chemically treated pads on plastic strips produce color change
- Pop-top vials have molded desiccant liner and hinged snap cap to protect from moisture
- As little as 10-second development time
- Test strips for testing water: wastewater, industrial water boiling and cooling, drinking water, laundry and sanitation



Cat. No.	Parameter Specifications	Quantity	Unit of Measure
S72329	Chlorine - total, low range	1	Each
S72315	Chlorine - free, high range	1	Each
S72330	Copper	1	Each

Eisco™ Secchi Disk Including Rope

Used to determine transparency of water in lakes, streams, and oceans.

- A 9-inch disc of alternating black and white quadrants
- Provides quick and easy way to probe turbidity, which is measure of clarity of water
- Turbidity is in turn related to amount of sediments or pollutants in water
- Grade: 9 to College



Cat. No.	Description	Quantity	Unit of Measure
S13019	Secchi Disk	1	Each

Turbidity Tubes

Determine the degree of visibility when a Secchi disk can't be used.

- Clear polycarbonate tubes with a centimeter scale on one side and a Secchi disk design on the bottom
- Secchi design (4.5 cm dia.) is screwed onto a stopper that removes for cleaning
- Drain with the drain hose and attached finger crimp
- In two lengths for different turbidity requirements
- Longer length meets requirements of The GLOBE Program™
- Length: 60 cm
- Material: Polycarbonate



Cat. No.	Description	Quantity	Unit of Measure
S90543B	Turbidity Tubes	1	Each

Kick-Net

Strong net designed for rapid bioassessments.

- Use this net for performing USEPA Rapid Bioassessment Protocols for benthic macroinvertebrates
- 1 x 1m², 500 µm, tan net
- Hemmed sides hold poles
- Reinforced bottom seam helps anchoring



Cat. No.	Description	Quantity	Unit of Measure
S85005P***	Kick-Net Kick with Poles	1	Each

Student Screen Sieves Set

Separate soil ranging in size from pebbles to silt.

- Load samples into top sieve, cover and shake vigorously
- Set of four sieves separates the sample based on particle size
- Outer diameter: 4 in.



Includes: Cover, solid bottom container, and stacking containers with No. 6, 20, 40, 100 wire mesh screens

Cat. No.	Description	Quantity	Unit of Measure
S53020A	Sieves Set	1	Each

Eisco™ 8 Piece Plastic Sieve/Strainer Set

Six plastic sieves with stainless steel mesh, cover and bottom collector.

- Each sieve has a plastic frame having an individual size one each (mesh no. 5, 10, 35, 60, 120, 230)
- Complete with plastic lid and bottom collector
- Stackable - diameter of sieves are 6.75 in.
- Total height of stacked sieves approximately 15 in.



Cat. No.	Description	Quantity	Unit of Measure
S12897	Sieve Set	1	Each



Eisco™ Bottom Sampling Net

Designed specially for collecting animals and vegetation from trees, or pond and stream bottoms.

- Sturdy metal edge net designed for sampling from trees and bottoms of ponds/streams
- Strong cloth backed with metal wire mesh
- Top ring has flattened outer edge to facilitate bottom sampling
- Net collapses completely for carrying and storage
- Net is 10 in. in diameter and is 27.5 in. deep
- Grade: 9 to College
- Material: Cloth, Metal

WARRANTY: 1 year limited manufacturer

Cat. No.	Description	Quantity	Unit of Measure
S29534	Bottom Sampling Net	1	Each



Eisco™ Plankton Net with Collection Vial

Features a collection bag made of strong bolting netting cloth suspended by muslin reinforcement and mounted on a wire ring.

- 35 in. deep plankton net
- 12 in. diameter metal ring
- Made of strong muslin netting cloth
- 3 braided leads provide maximum strength during collection
- Strong cloth pocket holds collection vial
- Includes durable plastic collection vial
- Collection vial is 2 in. deep with a 1.5 in. opening
- Grade: High School

WARRANTY: 1 year limited manufacturer

Cat. No.	Description	Quantity	Unit of Measure
S29535	Plankton Net	1	Each



Plankton Net

Collect minute plankton quickly and easily with this Plankton Net.

- Take your students fishing for minute plants and animals.
- The density of plankton in a lake or ocean can indicate the water's condition.
- Your students can determine the density, and the nature of the plankton in water samples by using our conical plankton net.
- Made of fine-mesh nylon, it permits the passage of water but filters out minute plankton which are collected in a 50 mL graduated tube that is fastened securely to the end of the net.
- A stainless steel ring and harness keep the net open while it is pulled through the water.
- The net opening is 5 in. in diameter, and the length is 15 in. from ring to tip.



Cat. No.	Description	Quantity	Unit of Measure
S45085E	Plankton Net	1	Each

D-Net with Expandable Pole

Bag attached to metal frame with clamp rings.

- 12 in. (30.5 cm) rim dip net
- Rim fitted with heavy canvas bag, approximately 6.5 in. deep (16.5 cm)
- The bag bottom is made of approximately 500 μ m nylon mesh
- Canvas skirt extends 3 in. (7.6 cm) below bag bottom to protect mesh
- Aluminum pole extends from 52 to 84 in. (137.2 to 213.3 cm)

Cat. No.	Description	Quantity	Unit of Measure
S85027	D-net with Expandable Pole	1	Each
S85027B	Replacement Bag	1	Each



Alternative Energy

Vernier Science Education™ KidWind Solar Thermal Exploration Kit

To explore variables such as box color, light intensity, tube design, rate of water pumping, and amount of time to heat water.

- Similar to domestic solar water-heating system
- Recommended for College, High School, and Middle School Science

WARRANTY: 5 year limited

Cat. No.	Description	Quantity	Unit of Measure
S04829ND	Solar Thermal Exploration Kit	1	Each



Vernier Science Education™ KidWind Basic Wind Experiment Kit

Allows young scientists to test various blade designs, generate electricity, and lift weights.

- Recommended for all grades
- Explore wind energy and wind power affordably and easily
- For grades 4 to 12 and groups, as well as individual science fair projects
- Also available in Classroom Pack which is sufficient for approximately 24 students

Specifications:

- Height: 24 in.
- Maximum blade diameter: 36 in. (with provided materials)
- Maximum number of blades: 12
- Expected power output: 0 to 1 watts
- Number of different nacelles: 2

Activities:

- Design turbine blades
- Generate electricity
- Measure power output
- Lift weights, charge capacitor and Light LEDs
- Produce more power than the basic kit
- Compare different designs
- Explore torque vs. speed

Concepts:

- Understanding clean energy
- Exploring energy transformations
- Understanding relationship between energy and forces
- Developing and using physical models
- Understanding differences between energy and power
- Collecting data with advanced tools
- Analyzing and interpreting data
- Designing controlled experiments
- Optimizing designs
- Using mathematics to explain and understand data

Individual kit (S04807ND) includes: wind turbines, hubs, blade consumables, power output device

Classroom pack (S04808ND) includes: 3 turbines; extra hubs, blade consumables, power output devices (for approx 24 students)

WARRANTY: 5 year limited (excludes consumables)

Cat. No.	Description	Quantity	Unit of Measure
S04807ND	Kit, KidWind Basic Wind Experiment	1	Each
S04808ND	Kit, KidWind Basic Wind Experiment, Classroom Pack	1	Each

Vernier Science Education™ KidWind Advanced Wind Experiment Kit

Discover advanced concepts of wind turbine technology by testing different blade designs, gear ratios, generators, and devices to measure electrical and weightlifting power.

- Recommended for college, high school, and middle school science
- Students can construct blades to generate electricity, lift weights, and pump water
- Height: 24 in.
- Maximum blade diameter: 36 in. (with provided materials)
- Maximum number of blades: 12
- Expected power output: 0 to 2 watts
- Number of different gear ratios: 3
- Table or floor space needed: 18 in. diameter circle
- Also available in classroom pack: includes three turbines, extra hubs, and blade consumables for approximately 24 students

Activities:

- Design turbine blades
- Generate electricity
- Measure power output
- Lift weights, pump water, charge capacitor
- Drag race cars with weights
- Build generators (with GenPack add-on)
- Produce more power than the basic kit
- Compare airfoils and flat blades
- Explore torque vs. speed

Concepts:

- Understanding clean energy
- Exploring energy transformations
- Understanding relationship between energy and forces
- Developing and using physical models
- Understanding differences between energy and power
- Collecting data with advanced tools
- Using mathematics to explain and understand data

Individual kit (S04798ND) includes: wind turbine, hubs, and blade consumables

Classroom pack (S04799ND) includes: 3 turbines, extra hubs, and blade consumables for approximately 24 students

WARRANTY: 5 year limited

Cat. No.	Description	Quantity	Unit of Measure
S04798ND	Kit, Advanced Wind Experiment	1	Each
S04799ND	Kit, Advanced Wind Experiment, Classroom Pack	1	Each



Vernier Science Education™ KidWind Wind Turbine Hubs

To turn any DC generator into a wind turbine.

- Recycled plastic made 12-hole crimping
- Press fits onto shaft of small DC generators to generate wind power
- Allows blade angles and/or interchange blade sets to be changed
- Diameter: 5.7 cm (2.25 in.)
- Max number of dowels: 12
- Size of shaft hub press fits onto: 2 mm
- Recommended for college and high school

WARRANTY: 5 year limited

Cat. No.	Description	Quantity	Unit of Measure
S04833ND***	Wind Turbine Hubs	10	Pack
S16180ND***	Wind Turbine Hubs	3	Pack



Vernier Science Education™ KidWind Dowels

Used for designing and testing wind turbine blades and fit into Wind Turbine Hub.

- Recommended for college, high school, and middle school science
- Students can design blades using materials like balsa wood or chipboard sheets, and attach their blades to 0.25 in. dowels using glue or tapes
- Dia. x L: 0.63 x 12.7 cm (0.25 x 5 in.)

Cat. No.	Description	Quantity	Unit of Measure
S04810ND	KidWind Dowels	100	Pack
S04811ND	KidWind Dowels	25	Pack



Vernier Science Education™ KidWind Balsa Blade Sheets

Lightweight and stiff, suitable for making experimental wind turbine blades.

- Recommended for college, high school, and middle school science
- Easy to cut, carve, and shape
- Used as wood skeletons inside fiberglass for real wind turbine blades
- L x W: 30.48 x 7.6 cm
- Thickness: 2.5 mm

Cat. No.	Description	Quantity	Unit of Measure
S04801ND	Balsa Blade Sheets	100	Pack
S04802ND	Balsa Blade Sheets	10	Pack



Vernier Science Education™ KidWind Wind Turbine Generator with Wires

Provides high power output at relatively low RPM for wind turbine experiments.

- 4-foot leads attached with shrink-wrapped, reinforced soldering
- Output in non-g geared wind devices: 0.5 to 2.5V at 0.1 to 0.3A
- Used in KidWind Challenge events
- Diameter: 1.25 in.
- Wire length: 4 ft.
- Shaft diameter: 2 mm
- Recommended for College, High School, and Middle School Science

WARRANTY: 1 year

Cat. No.	Description	Quantity	Unit of Measure
S04814ND***	Wind Turbine Generator	1	Each



Vernier Science Education™ KidWind Airfoil Balsa Blade Sheets

For College, High School, and Middle School Science students to explore Bernoulli's principle.

- Pre-shaped wood in an airfoil shape to generate lift and reduce drag for rotors
- More productive than similarly shaped flat blades
- Length: 30.4 cm (12 in.)
- Width: 7.6 cm (3 in.)
- Thickness: 0.5 cm (0.25 in.) at thickest section

Cat. No.	Description	Quantity	Unit of Measure
S04797ND	Balsa Blade Sheets	1	Each



Vernier Science Education™ KidWind Chipboard Sheets

Lightweight, stiff recyclable and easy to cut sheets, suitable for making experimental wind turbine blades.

- Recommended for all grades
- L x W: 30.48 x 7.62 cm
- Thickness: 1.5 mm

Cat. No.	Description	Quantity	Unit of Measure
S04809ND	Chipboard Sheets	1	Each



Vernier Science Education™ KidWind Small Water Pump with Tubing



To demonstrate power output from the wind and solar kits.

- Can be used to compare how high different turbines function to pump water
- Recommended for College and High School

WARRANTY: 5 year limited

Cat. No.	Description	Quantity	Unit of Measure
S04821ND***	Water Pump with Tubing	1	Each

Vernier Science Education™ KidWind Drivetrain Set



To connect wind turbine hub to a nacelle during experiments.

- Recommended for College and High School
- **Includes:** 8 in. hex shaft for use with Advanced Wind Experiment Kit Nacelle
- Does not work with the Basic Wind Experiment Kit Weightlifter Nacelle

WARRANTY: 5 year limited

Cat. No.	Description	Quantity	Unit of Measure
S04812ND***	Drivetrain Set	1	Each

Alternative Energy Education Kit

A comprehensive educational set for exploring alternative energy that combines horizontal, hydro, and vertical turbines.

- The Alternative Energy education set is the most comprehensive of all our Energy Educational offerings. It combines all our turbines: the Horizontal Turbine, Hydro Turbine, and Vertical Turbine.
- **S4131910 Includes:** 1 Solar Panel 7.2V 200mA, 1 Multimeter, 1 Level 1 Vertical Turbine Kit, 1 Level 1 Horizontal Turbine Kit, 6 Hydro Paddles
- **S4131912 Includes:** 1 Solar Panel 7.2V 200mA, 1 Multimeter, 1 Level 3 Vertical Turbine Kit, 1 Level 3 Horizontal Turbine Kit, 1 Level 1 Hydro Turbine Kit

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S4131910	Level 1	1	Each
S4131912	Level 3	1	Each

Renewable Energy Kit

Demonstrate the workings of a complete clean energy system on a miniature scale.

- Combines electronics, chemistry, and physics with multiple experiments
- Modular experiment set encourages users to learn the system step-by-step or configure the system in different ways

Renewable Energy Education CD

- **Renewable Energy Science Education Manual:** introduces renewable energy in seven chapters—Global Warming and Climate Change, Solar Technologies, Wind Technologies, Electrolyzers, Fuel Cells, Hydrogen Storage, and Basic Electronics
- **Experiment Manual:** more than 20 experiments for middle to high school level sciences in several sections—Solar Energy, Wind Energy, Energy from Hydrogen (Fuel Cell), and “Ultra Cool” experiments
- **Animations:** describe and show how a fuel cell works, different types of fuel cells, electrolysis, and various applications for fuel cells
- Assembly guides
- Technical support with videos

Cat. No.	Description	Quantity	Unit of Measure
S98609	Renewable Energy Kit	1	Each

50 Watt Wind and Solar Hybrid System

A complete hybrid wind and solar system kit that is great for a STEM lab classroom, camp, or scout project.

- Get started with solar and wind energy in one complete kit
- This kit includes a 50 watt solar panel and a 50 watt DIY Wind Turbine Kit
- The system voltage is 12V DC with the solar panel having an average output of 1.2 amps and the wind turbine having a typical output of 1 to 2 amps

Contents:

- 1 pre-assembled motor (24V)
- 1 motor housing
- 1 housing cap
- 5 50 watt blades
- 1 blade hub
- 1 long tower (14 in.)
- 1 short tower
- 1 base
- 1 weighted insert
- 1 back fin
- 1 fin rod
- 10 nuts 8-32 x 3/4 in.
- 10 screw 8-32
- 1 solar panel (50 watt/12 V)
- 1 battery (12 V)
- 1 inverter (12V DC-110 AC)

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S81193	Kit, STEM	1	Each



Need help choosing supplies?

Use this curated list of products to restock your physics classroom, and visit **fisheredu.com** to find even more science education products.



Description	Cat. No.	Quantity
Weight and Density		
Fisher Science Education™ Portable Balances, Capacity: 300 g	S94792C	Each
OHAUS™ Triple Beam Balances, Capacity: 0.61 kg (1.34 lb.)	S40020	Each
Fisher Science Education Analytical Balance with Draftshield, Capacity: 220 g	S72473	Each
Eisco™ Premium Brass Slotted Mass Set	S41488	Each
United Scientific Supplies Properties of Materials Classroom Set	S27839	Each
Eisco Equal Mass Metal Cylinders Set	S07850	Each
United Scientific Supplies Fractional Brass Masses	S40200	Each
Electricity		
Vernier KidWind simpleGEN Easy-to-build AC Generator Kit	S04824ND	Each
Eisco Deluxe Battery Eliminator	S96208	Each
Innovating Science™ Stem Investigations: Create Your Own Power Kit	S27135	Each
Kemtec™ Series and Parallel Circuits Kit	S27538	Each
Eisco Physics Kit: Electricity System 1	S13471	Each
Magnetism		
United Scientific Supplies Alnico Bar Magnets	S13055	Each
Fisher Science Education Ring Magnet	S04585	Each
Eisco Junior Science Magnet Kit	S13479	Each
Eisco Magnetic Field Demonstrator	S23754	2/Pack
Light		
United Scientific Supplies Prism and Lens Sets	S90324	Each
United Scientific Supplies Whiteboard Optics Set	S05907	Each
Eisco Optics Lens and Mirror Set	S24875	Each
Sound		
Eisco 8 Piece Tuning Fork Sets with Case	S27731	Each
Aqua Phoenix™ Sound and Music Kit	S02092	Each
Mechanics		
Eisco Garage Physics Catapult Kit	S24329	Each
United Scientific Supplies Mini Projectile Launcher	S27831	Each

Eisco™ Solar Furnace

Showcases the transfer of energy between solar radiation and thermal energy.

- Ideal for physics classroom demonstrations on solar energy
- 11.8 in. parabolic mirror to focus the light rays
- Sun's rays effectively heat the copper cup at end of column
- Height (English): 18 in.
- Diameter (English) 11.8 in.



Cat. No.	Description	Quantity	Unit of Measure
S12958	Solar Furnace	1	Each

Eisco™ Solar Cell Unit

Capture the sun's energy with this solar cell and transfer the electricity to the Mini Motor (not included) which generates enough power to operate a small propeller.

- Single, small sized solar cell unit
- Unit has two 4 mm plug terminals
- Easily connects using standard 4 mm banana plug connection leads
- Capture the sun's energy with the solar cell
- Connect to mini motor (not included) and generate enough power to operate a small propeller
- Great tool for science projects, as well as energy conversion and electrical circuit demonstrations
- Dimensions (L x W x H): 3 x 4 x 1 in.



Cat. No.	Description	Quantity	Unit of Measure
S80857	Solar Cell	1	Each

Eisco™ Polycrystalline Solar Cell with Wires

Polycrystalline solar cell includes yellow and red leads, and is ideal for use with other 1.5 V devices including buzzers, motors, lightbulbs, and much more.

- Includes yellow and red leads (approximately 5.5 in. each)
- Excellent for use in a wide variety of science fair projects and classroom demonstrations
- Size: 54 x 54 mm
- Electrical Requirements: 2 V, 0.26 W, 130 mA



Cat. No.	Description	Quantity	Unit of Measure
S26590	Solar Cell	1	Each

Solar Panel with Alligator Clips

Each panel comes with alligator clips to easily hook up and power anything.

- Typical applications include solar model cars, solar model boats, solar toys, solar scientific kits, solar experimental kits, and solar construction kits
- Panels can be connected in series or parallel to increase voltage or current output
- 20 in. insulated alligator clip lead (1 red, 1 black)
- Solar cell type: polycrystalline
- Amperage: 200 mA
- Wattage: 1.4 W (7.2 V)



Cat. No.	Description	Quantity	Unit of Measure
S81194	Solar Panel	1	Each

Vernier Science Education™ KidWind 2V/400mA Solar Panel

For classroom experiments and basic applications that require more power.

- Includes external screw terminals and attached clip cord for easy handling
- Dimensions: 6.2 x 12 cm
- Recommended for college, high school, and middle school science

Activities performed:

- Build solar fan
- Compare efficiency over time without changing the angle of the panel
- Compare temperature and rate for temperature increase, depending on time of day and ambient air temperature

Concepts:

- Understanding clean energy, and discovering and discussing solar power as an energy source
- Differences between power and energy
- Learning weather and climate
- Exploring circuits, electricity, and magnetism
- Designing controlled experiments
- Analyzing data

WARRANTY: 5 year limited

Cat. No.	Description	Quantity	Unit of Measure
S04828ND	Solar Panel, 400 mA	1	Each



Solar Car

A great STEM product for K-12 classrooms, camps, or at-home learning about the power of solar energy.

- Made with 3D printed materials and manufactured in the United States, this STEM product will teach your young learner the power of solar energy
- No soldering or batteries are required

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.



Cat. No.	Description	Quantity	Unit of Measure
S4131924	Level 1	1	Each

Eisco™ Energy Conversion Kit

A great tool to discover conversion processes of different types of energy.

- Perfect for hands on experience in the classroom
- 3 different devices are used to generate electricity
- 5 different devices convert the generated electricity into 5 different forms of energy
- Includes 3 different sources for the generation of energy: hand crank (mechanical), cell battery holder (electrical), and a solar cell (light)
- Five circuit elements can each be inserted into the board to observe the use of the generated electrical energy: motor with fan (mechanical), buzzer (sound), LED (light), resistor (heat), and an electromagnet (magnetism)
- Apparatus measures 10 x 8 x 6.75 inches
- Grade 4 to 14
- Requires 2 C batteries (not included)



Cat. No.	Description	Quantity	Unit of Measure
S27886	Energy Conversion Kit	1	Each

Pre-Marked Ceramic Rare Earth Magnets

The strongest permanent magnet.

- Rare-earth magnets, made from alloys of rare-earth elements are the strongest type of permanent magnet available today.
- Magnetic properties for rare-earth magnets far exceed those of other magnet materials, making them the preferred choice for many commercial, industrial and technical applications.
- Dimensions (H x L): 2 x 3 in. (50.8 x 76.2 mm)
- Pack of 4

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.



Cat. No.	Description	Quantity	Unit of Measure
S81196	Rare Earth Magnets	1	Each

United Scientific™ Solar Furnace

A graphic demonstration of the sun's radiative energy.

- Concentrate solar energy to boil water
- Large convex mirror is adjustable through 180° to follow the sun throughout the day
- Experiment with different liquids to study specific heat
- Dimensions (H x L): 45 x 22 cm
- **Includes:** Convex Mirror, Activity Guide



Cat. No.	Description	Quantity	Unit of Measure
S27843	Solar Furnace	1	Each

Physics

Aerodynamics & Flight

Bottle Rocket Launcher

Students can observe the effects of varying moments of inertia.

Pressurize a plastic soda bottle with an ordinary bicycle pump (not included). Vary the amount of pressure and/or water fuel to see whose rocket will go the highest. Experiment with different fin styles to observe how changes in design affect flight paths.

- Solid aluminum construction
- Simple triggering mechanism
- Mounting stakes



Cat. No.	Description	Quantity	Unit of Measure
S41988	Bottle Rocket Launcher	1	Each

Eisco™ Bottle Rocket Launching Platform

Introduces rocket science and concepts involving Newton's laws to students.

- Uses water and pressurized air as fuel
- Bottle rocket launcher attached to sturdy base
- Can launch 2 L plastic soda bottles over 30.4m (100 ft.) in the air
- Using water as liquid fuel, pressurize bottle with bicycle pump (Schafer-type connection, pump not included)
- Bottle is remotely launched from safe distance using corded release mechanism
- Dimensions (L x W x H) 13.5 x 9.5 x 13 in. (34.2 x 24.1 x 33 cm)



Cat. No.	Description	Quantity	Unit of Measure
S12993	Bottle Rocket Launching Platform	1	Each

Eisco™ Spring-Loaded Projectile Launcher

Launch a projectile at any angle from -15° to $+90^\circ$ straight up.

- Solidly built to withstand the rigors of a hands-on lab, and precision machined for reproducible results
- Clamps to any tabletop, compatible with an electronic timer
- Angle adjusts with launcher mount, then locks into place with auxiliary brace
- Combination of launcher mount and brace means maximum flexibility plus great rigidity
- Measure your angle to within 0.5° accuracy with plumb bob
- Range is up to 10 ft. (3 m) and is infinitely adjustable
- Material: Aluminum



Cat. No.	Description	Quantity	Unit of Measure
S96174	Projectile Launcher	1	Each

United Scientific™ Mini Projectile Launcher

Suitable for use on a laboratory benchtop or from the bench to the floor.

- Projects 16 mm steel balls from 45° downward to straight up
- Three spring tensions (1, 1.5, and 2 m) for easily repeatable launch speeds
- Cable release provides smooth triggering
- Magnetic piston ensures a straight launch
- Suitable for use on the bench top, or from the bench to the floor



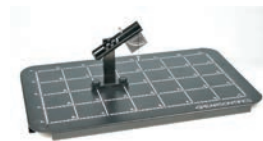
Cat. No.	Description	Quantity	Unit of Measure
S27831	Mini Projectile Launcher	1	Each

Eisco™ Visual Scientifics Projectile Launcher

Inquiry-led activity to experimentally verify projectile equations.

Provides materials that students can use to easily see, understand and derive physical laws that govern projectiles.

- Main Lab: inquiry lab to derive and then experimentally verify projectile equations
- Extension One: technology-based verification of theoretical modeling
- Extension Two: using experimental results to meet design criteria
- Covers 12 Next Generation Standards Concepts
- Covers 10 Common Core Standards
- Approximately three to four hours of class/lab time material
- 23 pages in total
- Student workbook is a guide for students to fill out as they work through the main lab and lab extensions
- General Theory Section lays out the theory and mathematics behind the lesson plan
- Experimental Teaching Guide helps teachers prepare lesson plans and lead inquiry or step-based activities
- All labs and extensions include recommendations for video analysis setups
- Grade 9 to 12



Cat. No.	Description	Quantity	Unit of Measure
S06902	Projectile Launcher	1	Each

Projectile Launcher for Plastic Marbles

Projectile Launcher for Plastic Marbles can launch the plastic marbles a maximum of 8 meters.

- Launch tube has five speed settings that can lock into place to assure consistent launches at the same velocities
- Protractor printed on the base to measure the angle of launch
- Photogate (not included) can be attached near the mouth of the launcher to accurately record initial velocity



Cat. No.	Description	Quantity	Unit of Measure
S38982	Projectile Launcher for Plastic Marbles	1	Each

Vernier Science Education™ Bumper and Launcher Kit

The Bumper and Launcher Kit contains accessories for experiments involving the Vernier Dual-Range Force Sensor, Vernier Wireless Dynamics System and the Vernier Dynamics System. The accessories allow you to perform a wide range of experiments in kinematics and dynamics.

- Contains accessories for experiments involving the Dual-Range Force Sensor, Wireless Dynamics Sensor System, and Dynamics Cart and Track System

Includes:

- One track bracket
- One dual-magnet bumper
- One DFS end mount screw
- Two magnetic bumpers
- Two rubber bumpers
- Two hoop bumpers
- Two clay holders
- Clay

WARRANTY: 5 year limited

Cat. No.	Description	Quantity	Unit of Measure
S15969ND	Bumper and Launcher Kit	1	Each

Bottle Rocket Launcher

Build rockets from ordinary plastic soda bottles that can soar to heights in excess of 150 feet when using the Supertek™ Bottle Rocket Launcher. All you need is water!

- Comes with 1 Solid aluminum bottle rocket launcher.
- A quick tug on the release cord and your rocket can soar 150+ feet!
- Instruction sheet included.
- Grade 6+



Cat. No.	Description	Quantity	Unit of Measure
S139432	Bottle Rocket Launcher	1	Each

Vernier Science Education™ Pneumatic Projectile Launcher

Ideal for investigating important concepts in two-dimensional kinematics.

- Launch steel balls at angles between 0 and 70 degrees and over distances up to 2.5 m
- The solid, heavy base provides an easy-to-use and reliable setup
- A unique pneumatic launching system provides excellent repeatability and allows you to set the launch speed
- Built-in photogates and angle markings provide easy and accurate measurement of the ball's launch velocity, allowing for precise quantitative analysis of projectile motion—Simply plug the device into a compatible data-collection interface

Specifications:

- Launch angle: 0 to 70 degrees
- Launch speed: 0–6 m/s
- Launch height: 146 mm
- Maximum launch distance: 2.5 m
- Internal photogate interval: 50 mm
- Steel ball diameter: 17.46 mm
- Steel ball mass: 21.8 g

Data Collection Interface and Software Compatibility

Data collection with the projectile launcher is possible with the following combinations of interfaces and software.

- **Logger Pro 3:** Use version 3.8.5 or newer with LabQuest™ 2, original LabQuest™, LabQuest™Mini, and LabPro™
- **LabQuest App:** Use LabQuest 2 or original LabQuest with version 1.6 or newer when LabQuest is used as a standalone device
- **DataQuest™ Software for TI-Nspire™:** Use this application with TI-Nspire Technology and the TI-Nspire Lab Cradle
- **EasyData App:** Use this app with a TI-83 Plus or TI-84 graphing calculator and LabPro or CBL 2™
- **LabVIEW™** National Instruments LabVIEW software is a graphical programming language and used with SensorDAQ. Contact Vernier for more information concerning compatibility

Cat. No.	Description	Quantity	Unit of Measure
S15975ND	Projectile Launcher	1	Each



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Eisco™ 'g' by Free-Fall Apparatus Kit

The 'g' by Free-Fall Apparatus Kit demonstrates determination of gravitational constant 'g'.

- Includes wooden base, 1.1 m rod, movable electromagnet, timer
- Electromagnet powered by timer
- Supplied with manual



Cat. No.	Description	Quantity	Unit of Measure
S24852	Kit, Free-Fall Apparatus	1	Each

Kemtec™ Gravity Well Kit

Allows students to build a large scale demonstration model to explore gravity in the classroom.

- Students model the bending of spacetime by gravity to explore the behavior of gravity on a cosmic scale.
- Simulate the motion of planets, galaxies, star systems, moons, and more.
- Create synchronous orbits and model the Big Bang Theory.
- Materials expansion kit for S27543, Earth's Place in the Universe.
- Meets National Standards for Grades 6 to 12.



Cat. No.	Description	Quantity	Unit of Measure
S27544	Gravity Well Kit	1	Each

Electricity & Magnetism

Science Cube Kits

These kits are perfect for group experiments or home schooling. Students learn by using the included exploration guide. Save space by storing kit materials in the reusable plastic snap box.



- Ages 7+
- Grade 1

Telegraph Kit (S89512)

- Students experience a little bit of history, learn Morse Code, and even send a secret message to a friend

- **Includes:** 1 D-cell battery holder, 1 contact key, 2 light bulbs, 5 alligator connector cords, 1 buzzer

Simple Circuit Kit (S89513)

- Students create a simple circuit and learn about electricity, currents, voltages, series circuits, and much more
- **Includes:** 1 D-cell battery holder, 1 knife switch, 2 light bulb holders, 2 light bulbs, 5 alligator connector cords

Conduction Experiments Kit (S89514)

- Students make their own conduction experiment and explore which substances are conductors and which are insulators
- **Includes:** 2 D-cell battery holders, 1 light bulb, 1 light bulb holder, 4 alligator connector cords, 1 toothpick, 1 penny, 2 paper clips

Magnetic Fun Kit (S89517)

- Students make their own magnets and discover their properties, learn what poles are, make that magnet float, and then have fun discovering all there is to learn about magnetism
- **Includes:** 3 magnetic wands, 36 magnetic marbles, 3 magnetic rings, 1 floating magnet stand, 1 compass



Cat. No.	Description	Quantity	Unit of Measure
S89512	Telegraph	1	Each
S89513	Simple Circuit	1	Each
S89514	Conduction Experiments	1	Each
S89517	Magnetic Fun	1	Each



Supporting Your Sustainability Journey

Wherever you are in setting goals to **pave a greener path forward**, the Fisher Science Education team is here to help.

Visit fishersci.com/sustainability to learn more.



Energy Forms and Changes and Electricity and Magnetism Student Learning Guides with Online Lesson

An ideal blended learning solution for use in the classroom or for remote learning/home study.

- Colorfully-illustrated student learning guide provides 36 pages featuring self-directed readings, easy-to-follow illustrated explanations, guiding questions, a lab investigation, key vocabulary review, and assessments
- Also includes one year access to a corresponding multimedia lesson for a teacher and all their students. Each lesson features animated narrated tutorials, interactive exercises and activities, virtual lab investigations, illustrated narrated glossary, visual resource library, and an inquiry-based student activity guide
- Developed under sponsorship of the National Institutes of Health (NIH) the lessons are perfect for individual student instruction on any computer or tablet as well as classroom presentation on any interactive whiteboard.
- Grade 6 to 10

Energy Forms and Changes Learning Guide (S436037) covers: Introduction to Energy, Potential Energy, Kinetic Energy, Forms of Energy, Energy Transformation, Conservation of Energy, Heat and Heat Technology, Nonrenewable Energy, and Renewable Energy

Electricity and Magnetism Learning Guide (S436042) covers: Electricity, How Objects Become Charged, Electric Current, Electrical Resistance, Electric Power, Electric Circuits, Batteries, Electrical Safety and Magnetism

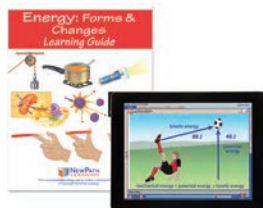
Cat. No.	Description	Quantity	Unit of Measure
S436037	Energy Forms and Changes	1	Each
S436042	Electricity and Magnetism	1	Each

Eisco™ Junior Science Magnet Kit

For science experiments.

- Grade 9 to 12
- Kit Components:**
- 1 pc. each of square iron, aluminum, zinc and copper metal
 - 1 horseshoe magnet with keeper (100 mm)
 - 2 ceramic bar magnets (75 mm)
 - 3 ceramic ring magnets (38 mm dia.) face polarised
 - 2 plotting compasses, clear both sides (19 mm dia.)
 - 1 pack iron filings

Cat. No.	Description	Quantity	Unit of Measure
S13479	Junior Science Magnet Kit	1	Each



Eisco™ Bar Magnet Set

Alnico bars with keepers.

- Each size sold as set of two magnets
- Grade 9 to 12



Cat. No.	Size	Dimensions (L x W x H)	Quantity	Unit of Measure
S95957	Large	3.0 x 0.4 x 0.2 in. (75 x 11 x 6 mm)	2	Pack
S95956	Small	1.5 x 0.4 x 0.2 in. (38 x 11 x 6 mm)	2	Pack

Eisco™ Pair of Chrome Steel Bar Magnets with Keepers

Allows students to perform a variety of activities and experiments involving magnetism.

- The magnet keeper helps preserve the strength of the magnet by completing the magnetic circuit and also prohibits external metal from being attracted to the magnet
- Low magnetic strength for careful experiments
- Includes 2 chrome steel magnets with keepers
- Grade 7 to Undergraduate



Cat. No.	Dimensions (L x W x H)	Quantity	Unit of Measure
S27736	12 x 5 x 150 mm	1	Each
S27737	19 x 6 x 150 mm	1	Each

Eisco™ Ceramic Magnetic Disk

Economically priced and perfect for student use.

- Ceramic disc magnets
- Grade 7 to Undergraduate

WARRANTY: 1 year limited manufacturer



Cat. No.	Dimensions (L x W)	Quantity	Unit of Measure
S40914	20 x 4 mm	1	Each
S40917	25 x 5 mm	1	Each

Eisco™ Floating Ring Magnets

Demonstrate magnetic repulsion in a colorful and memorable way.

- When stacked so they mutually repel, the rings appear to float on the support rod
- Grade 9 to 12

Includes: Five 12.6 in. (32 cm) external diameter ceramic ring magnets; one 5.9 in. (15 cm) wooden rod on base



Cat. No.	Description	Material	Quantity	Unit of Measure
S95967	Ring Magnets	Ceramic	1	Each

Ring Magnets

Study magnetic attraction and repulsion.

- Pack includes 16 magnets



Cat. No.	Description	Quantity	Unit of Measure
S52173	Ring Magnets	1	Pack

Eisco™ Horseshoe Magnets

Chrome steel, with keepers.

- Grade 9 to 12



Cat. No.	Description	Dimensions (L x W x H)	Quantity	Unit of Measure
S95963	Horseshoe Magnet	8.6 x 5.9 x 1.57 in.	1	Each

Eisco™ Magnetizer Box for Bar Magnets

User-friendly magnetizer box for bar magnets has the ability to re-magnetize old magnets and make them like new again.

- Re-magnetizes old magnets
- Blue box with yellow markings and red switches
- Works on 110/120 V, 60 Hz
- Dimensions: 5.88 x 3.5 x 3 in.
- Grade 9 to 12

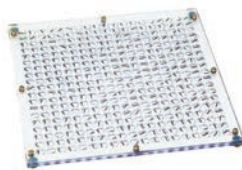


Cat. No.	Description	Quantity	Unit of Measure
S80847	Magnetizer Box for Bar Magnets	1	Each

Eisco™ Magnetic Field Demonstration Plate

Tool used to view magnetic fields.

- Transparent plate having matrix of small circular chambers with iron rod to function as plotting compass
- Suitable for OHPs
- Dimensions: L x W x H: 11.8 x 10.2 x 1.9 in. (30 x 26 x 5 cm)
- Size: 9.8 x 9.8 in. (25 x 25 cm)
- Grade 9 to 12



Cat. No.	Description	Quantity	Unit of Measure
S07851	Magnetic Field Demonstration Plate	1	Each

Eisco™ Dry Field Mapping Kit

Makes learning the concepts of electric fields easy. Students use the conductive paper that comes with the kit to draw any electrode configuration and then test it.

- Best experiment for visualizing the electric field
- Easy to find the electric field around any conducting shape
- Conductive paper allows probing of equipotential lines with multimeter (not included)
- Comes with instructions
- Multimeter and D-cell battery not included
- Grade 9 to 12



Cat. No.	Description	Shape	Quantity	Unit of Measure
S12984	Dry Field Mapping Kit	Rectangular	1	Each

Eisco™ Bread Board & Jumper Wire Set

An ideal tool for carrying out small electronic or electrical experiments.

- 1600 Spring Loaded Points
- Useful for fixing the components such as ICs, transistors, resistances, diodes, capacitors etc.
- Interconnecting columns for supply & common/earth points
- Three, 4 mm sockets are mounted on PCB with additional pins for connections
- Includes a set of 150 single strand wires in different lengths



Cat. No.	Description	Quantity	Unit of Measure
S27468	Bread Board and Jumper Wire	1	Each

Air Core Solenoid

Provides a useful magnetic field for many magnetism and electricity experiments.

- Investigate the mass of electron apparatus and experiments using the current balance (S94280)
- Constructed using four layers, approximately 710 turns, of #23 gauge (0.67 mm) polyurethane-enameled copper wire
- Coil is designed to carry 7-10A intermittently, and will sustain a current of 5A



To use:

- Connect a power supply that does not put out more than 5A to the solenoid
- Coil will generate a magnetic field when current passes through it
- Use a compass, iron rod, or iron filings to study the nature of the generated electric field

Cat. No.	Description	Material	Quantity	Unit of Measure
S94209	Air Core Solenoid	Copper	1	Each

Eisco™ Electrostatic Friction Rod Kit

Use to study static electricity by creating charges with different materials.

- This electrostatic kit provides the necessary tools to free both positive and negative charges for exploration into electrostatic forces.
- Students can experiment with different combinations of cloth and rod materials to explore how each manufactures charge carriers.
- Grade 6 to 11



Cat. No.	Description	Quantity	Unit of Measure
S13000	Electrostatic Friction Rod Kit	1	Each

Deluxe Van de Graaff Generator

Demonstrates electrostatic phenomena.

A first-rate apparatus for demonstrating static electricity.

- Generates potentials as high as 400,000 volts
- Produces sparks as long as 15 in. (38 cm)
- Belt current charges the dome at 10 μ A
- Variable motor speed
- Operates on 110VAC with grounded cord
- Replacement belts are available

Terminal:

- Located on the 9.8 x 11.8 in. (25 x 30 cm) base
- Grounded to safely produce sparks and discharge the dome

Aluminum Electrode:

- Highly polished and anodized
- 9.8 in. (25 cm) diameter
- Supported by a sturdy, insulated, polycarbonate column

Aluminum Sphere:

- 9.8 in. (25 cm) diameter
- Creates sparks of greater intensity
- Mounted on a Lucite™ rod with a metal base
- Overall height: 29.9 in. (76 cm)



Cat. No.	Description	Quantity	Unit of Measure
S43207	Van de Graaff Generator	1	Each

United Scientific™ Digital Multimeter

This versatile digital multimeter offers tremendous value.

- This versatile multimeter includes AC voltage, DC voltage, DC current, continuity, resistance, transistor and battery test modes
- Features an easy-to-read 3.5 in. digital LCD display
- Supplied with two 24 in. 18 gauge test leads
- Requires one 9V battery (included)



NEW

Cat. No.	Description	Quantity	Unit of Measure
S111002	Multimeter with LCD Display	1	Each

United Scientific™ DC Ammeter

Ammeter for use in electricity demonstrations.

- Mounted in a black plastic case
- Meters have a scale length of 75 mm
- $\pm 2.5\%$ accuracy and comes with 5-way binding post and external calibrating screw
- Meters are not protected against prolonged or significant overload
- Stackable for storage



Cat. No.	Description	Sufficient For	Quantity	Unit of Measure
S81078	DC Ammeter	0-1 A/0-5 A	1	Each

Eisco™ Ohm's Law Apparatus

Effectively demonstrates the interdependence of current, voltage, and resistance on Ohm's Law.

- Includes a DC Voltmeter, DC Current meter, and a built in low wattage rheostat
- DC Voltage is connected from outside at the appropriate sockets
- Measure the values of voltage (V), current (I), and connected external resistance (R) on the meters
- Can be verified using different set of voltage and resistance
- Grade: 9 to Undergraduate

Note: Comes with a European AC/DC power supply adapter (220V) that uses a Type C Europlug.



Cat. No.	Description	Quantity	Unit of Measure
S80856	Ohm's Law Apparatus	1	Each

Eisco™ Economy Electricity Kit

Ideal for introductory electronics.

- This kit is a basic assortment of circuit components
- Ideal for introductory electronics
- Grade 6 to 12
- **Includes:** 10 MES Lamp Holders, 10 MES Bulbs, (1) 6 V Buzzer with Connecting Leads, (1) Electric Motor, (3) 6 V, 15 Slide Switches, (1) 1.5 V Cell Holder, (10) Crocodile Leads



Cat. No.	Description	Quantity	Unit of Measure
S23691	Economy Electricity Kit	1	Each

United Scientific™ Student Electricity Assortment

Conveniently assembles materials for investigation of electricity concepts.

- Grade 5+
- **Includes the following:**
 - Round Plastic Bulb Holder (10)
 - Knife Switch, single pole/single throw (3)
 - Battery Holder with Fahnestock Clip (10)
 - Wire Stripper
 - Wire with Alligator Clips, 18 in., Assorted Colors (3)
 - Wire with Banana Clips, 18 in., Assorted Colors (3)
 - Insulated Copper Wire, 22 Gauge, 100 Foot Roll
 - 1.5 V Light Bulb (10)

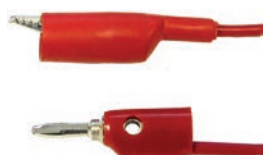


Cat. No.	Description	Quantity	Unit of Measure
S96416	Student Electricity Assortment	1	Each

United Scientific™ Red Banana/Alligator Cord

For use with multiple electricity demonstrations.

- Flexible, 18 gauge (SWG) stranded wire cord with a stackable banana plug at one end and an alligator clip at the other end
- Alligator clip has a protective vinyl sheath
- 12 in., 24 in., or 36 in. lengths



Cat. No.	Length (English)	Quantity	Unit of Measure
S81062	24 in.	1	Each
S81071	12 in.	1	Each

Force & Mechanics

Science Cube Kit – ABCs of Physics



Ever wonder how a clock works? Or how a roller coaster stays on its track? Explore all of this in this kit. Make your own timer as you discover how a pendulum clock works. Find out what $F=ma$ means as you learn about force, motion, and just how that roller coaster stays grounded.



- Perfect for group experiments
- Perfect for home schooling
- Save space when storing in reusable plastic snap box
- Ages 7+
- **Includes:**
 - 1 reusable plastic snap box
 - 1 stop watch
 - 1 tape measure
 - 1 single pulley
 - 1 double pulley
 - 1 table clamp pulley
 - 1 spring scale
 - 1 wooden ball
 - 1 steel ball, 3/4 in.
 - 1 steel ball, 1 in.
 - 1 Hall's carriage
 - 1 weight set
 - 1 string
 - 1 exploration guide
 - Grade 1

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S89518	Science Cube Kits	1	Each

Eisco™ Newton's Second Law of Motion Apparatus

Demonstrate Newton's Second Law of Motion with a device that can be mounted to a support stand or a table clamp.



- The apparatus is made of solid metal and designed to last many years in the classroom
- Base is painted blue and is 10 in. x 2.5 in.
- Spring-driven and offers two tensions
- Includes 7.5 in. x 0.50 in. diameter rod to be able to mount on a table clamp or fixed to a support stand
- Complete with two steel balls

Cat. No.	Description	Quantity	Unit of Measure
S12939	Newton's Law Demonstrator	1	Each

Eisco™ Newton Cradle Apparatus

For demonstration of conservation of momentum.

- With red wood base
- Lab quality
- Used to teach conservation of momentum in Physics classes
- Partially assembled
- Gift apparatus for office, desk, or living room
- 7.5 in. tall



Cat. No.	Description	Quantity	Unit of Measure
S12947	Newton Cradle Apparatus	1	Each

United Scientific™ Force Between Conductors Demonstrator

Reliable, dramatic demonstration of the magnetic forces between two current-carrying parallel conductors.

- Safely applies large current to two pivoting brass tubes
- Fuse protected
- Height (English): 22.2 in.



Cat. No.	Description	Quantity	Unit of Measure
S06986	Force Between Conductors	1	Each

United Scientific™ New York Demonstration Balance

Demonstrate basic physics principles including levers and center of gravity. Includes everything necessary to perform a simple, valuable lesson in physics.

- **Includes:** three knife edge lever clamps, a half meter stick, one 50 g hooked weight, one 100 g hooked weight, and an activity guide



Cat. No.	Description	Quantity	Unit of Measure
S23929	New York Balance	1	Each

Eisco™ Hall Car

For use to study relationship between energy and work.

- Used with inclined plane, weights, and pulleys
- Features molded one-piece body with central well to hold masses
- Molded wheels with sleeve bearings
- Features hole in one end of body to attach cords
- Grade K to 5



Cat. No.	Description	Quantity	Unit of Measure
S39653MKC	Hall's Car	1	Each

Eisco™ Rolling Friction Cars

Students can manipulate four cars to explore the force of friction.

- Each car's wheels are made of different material (wood, fabric, soft rubber, soft silicone), and each have different friction coefficients
- By setting cars in motion at the same speeds, students can qualitatively demonstrate frictional properties of rolling without slipping
- Dimensions (L x W x H): 5.8 x 6.5 x 3.5 in. (14.7 x 16.5 x 8.9 cm)



Cat. No.	Description	Quantity	Unit of Measure
S12997	Rolling Friction Cars	1	Each

Eisco™ Deluxe Intermediate Inclined Plane

Fully assembled physics lab features an inclined plane with hinged base and pulley.

- Metal arc is graduated to 45°
- Graduations are cast into the aluminum with centimeters as the smallest division
- Adjustable pulley held in position by a friction clamp
- Inclined plane: 0.56 x 1 x 21.2 in. (1.4 x 2.5 x 53 cm)
- Base: 4.5 x 1 x 22 in. (11.4 x 2.5 x 55 cm)



Cat. No.	Description	Quantity	Unit of Measure
S96184	Inclined Plane	1	Each

Eisco™ Inclined Plane and Friction Board

Ideal apparatus to investigate sliding friction.

- Consists of a plane board hinged at the base with a pulley for the force cord at the other end
- Fitted with arc
- Dimensions (L x W x H) 26.37 x 5.11 x 3.14 in. (67 x 13 x 8 cm)



Cat. No.	Description	Quantity	Unit of Measure
S07830	Inclined Plane and Friction Board	1	Each

Eisco™ Steel Inclined Plane with Car and Pulley

Steel Inclined Plane with Car and Pulley is 48 in. long, straight as an arrow, and can accommodate any type of car.

- Made of heavy steel with rounded corners
- Holes in the supporting flanges fit a 12 mm support rod
- Includes car, clamp pulley, string, and basket
- Stand base, rod, and support clamp are sold separately
- Material: Steel



Cat. No.	Description	Quantity	Unit of Measure
S27663	Inclined Plane	1	Each

Eisco™ Adjustable Clamp Pulley

To demonstrate a wide variety of mechanics principles.

- Sturdy metal construction
- Metal sheave can be adjusted from flush with tabletop to 13 cm above it
- Pulley can be rotated to 360° to suit any experimental setup



Cat. No.	Description	Quantity	Unit of Measure
S23660	Pulley, Adjustable Clamp	1	Each

Eisco™ Economy Force Table

Designed to help demonstrate Newton's first law, and the vector nature of forces and equilibrium.

- Heavy cast base with leveling screws
- 40 cm (diameter) durable polymer tabletop carries angle scale with 0.5° divisions, marked every 10° in both rotation directions
- Includes four pulleys and four sets of chrome plated slotted weights (250 g each set)
- Comprehensive teacher's guide is included containing background info, setup instructions & student activities
- Assembled size: (W x H) 14 x 17 in.



Cat. No.	Description	Quantity	Unit of Measure
S96528	Economy Force Table	1	Each

United Scientific™ Economy Force Table

NEW

This force table takes what was once only able to be used in front of the class as a demo, and puts it in the students' hands.

Explore Newton's laws of motion and demonstrate the equilibrium of forces with this economic tool. The lightweight design and suction cup feet enable placement on horizontal or vertical surfaces, including whiteboards. Included clamps securely hold spring scales in place while allowing for easy adjustments along the 360° protractor.



Contents:

- 360° protractor with suction cup feet
- 4 clamps
- 4 spring scales, 500 g
- Centering ring

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S83790***	Economy Force Table	1	Each

Eisco™ Hall's Car Pair

Essential items for dynamics experiments.

Use in conjunction with an inclined plane, pulley and weights to study the relationship between work and energy.

- Low-friction wheels
- Oil-free sleeve bearings that never need adjustment
- Durable plastic molded body has a deep well for weights and low profile

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.



Cat. No.	Description	Material	Quantity	Unit of Measure
S96317	Hall's Car Pair	Plastic	1	Pair

Eisco™ Plastic Dynamic Cart Set

Excellent upgrade from the traditional wooden or metallic carts.

Pair of single-piece, virtually unbreakable ABS carts can be used for a variety of precision experiments.

- The body is mounted on a set of three low-friction nylon wheels to produce straight-line travel over long distances
- Lockable spring-load punch has two levels of compression, activated by a trigger knob on top of the cart
- The cushioned cart surface supports the addition of more masses to increase the effective weight of cart
- Carts are stackable to create a single cart of two or three times the basic cart mass
- Velcro™ rear pads enable study of inelastic collisions



Cat. No.	Description	Material	Quantity	Unit of Measure
S05833	Dynamic Cart Set	Plastic	1	Each



Eisco™ Wood Dynamics Carts



Ideal for demonstrating Newton's laws of motion.

- Carts are made with low-friction ball-bearing wheels
- The top surface can be loaded with additional masses
- One cart in each set is equipped with an "exploder piston," activated by a trigger on top that can be preset to three positions
- Spring-steel hoop bumpers can be used for collision and energy experiments
- Set of 2

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S96175	3 Wheeled Cart	1	Each
S96176	3 Wheeled Cart with Hoop	1	Each

Eisco™ Collisions Kit

The Collisions Kit is an ideal tool to supplement introducing students to the concept of collision, momentum, and conservation of energy.



- Ideal for studying collision in terms of momentum and conservation of energy
- Instruction booklet is complete with a Teacher's Guide and reproducible Student Guide
- Recommended for Grades 9 to 12

Kit Includes

- Collision Track, 2 Collision Carts, 6 Slotted Masses, 2 Support Feet with Leveling Screws, 2 Photogate Support Rods, 2 Support Rod Holders, 1 Pulley, and Instruction Booklet

Required (Not Included)

- Photogate System, Mass Hanger, Slotted Weights, Balance, Masking Tape, String, Level, Meter Stick, Stopwatch, Protractor, Books, and Graph Paper



Cat. No.	Description	Quantity	Unit of Measure
S15118	Collisions Kit	1	Each

Eisco™ Hand Held Centripetal Force Kit



Provides necessary tools to discover properties of rotational dynamics.

- The rubber stopper swings around on the end of a string counter balanced by weights
- Allows students to see how mass and radius affect centripetal acceleration and rotational velocity
- **Includes:** Plastic handle, rubber stopper, string, 20 washers, 2 paper clips

Cat. No.	Description	Quantity	Unit of Measure
S13002	Centripetal Force Kit	1	Each

United Scientific™ Centripetal Force Kit



Help students to investigate the force on an object in circular motion.

- Through a series of simple demonstrations, students will better understand the relationship between the radius of the circular motion, the velocity of the moving object, and the external force required to maintain the motion
- Grade 5 to 12

Contents:

- Rubber stopper attached to cord approximately 1 m in length
- Plastic tube with beveled ends
- Hanging mass set: 12 aluminum weights - 9 x 20 g, 1 x 10 g, 2 x 5 g
- One 50 g aluminum hanger
- Paperclip (position marker)
- Activity guide included

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S89542***	Centripetal Force Kit	1	Each

Free Fall Apparatus

This dependably accurate item is easy to set up and use.

- A micro-magnet holds ball in start position
- Three contact pins ensure that the start position can be reproduced, and act as contacts of a switch that opens when the ball is released, triggering the timing measurement
- When the ball strikes the contact plate, the timer stops
- Drop height can be adjusted to a fraction of a millimeter
- Measurement is read off a scale on the column

Specifications

- Height scale: 20 to 960 mm
- Scale divisions: 10 mm
- Scale precision: 0.2 mm
- **Includes:** three steel balls, 16 mm dia.
- Dimensions: 7.875 x 5.125 x 39.375 in. (20 x 13 x 100 cm)
- Weight: 3.5 lb. (1.6 kg)



Cat. No.	Description	Quantity	Unit of Measure
S96479	Mechanics Free Fall Apparatus	1	Each



Eisco™ Hooke's Law Spring Set, 2 in.

This 5 piece Hooke's Law Spring Set is great for in depth studying of Hooke's Law principles. Each spring has a different constant, for use with Eisco Labs Hooke's Law Apparatus (PH0322).

- Set of five 2 in. springs, each with a different constant
- For use with Eisco Labs Hooke's Law Apparatus (S27660)
- Spring descriptions are provided below (Spring constant, Maximum weight)
- Spring 1: 10 g/cm, 100 g
- Spring 2: 20 g/cm, 225 g
- Spring 3: 50 g/cm, 550 g
- Spring 4: 100 g/cm, 1100 g
- Spring 5: 200 g/cm, 2200 g



Cat. No.	Description	Quantity	Unit of Measure
S27662	Hooke's Law Spring Set	1	Each

Eisco™ Hooke's Law Apparatus

Used to teach Hooke's Law in the classroom.

- A 15 cm mirror scale is marked in millimeters and mounted on a sturdy 30 cm support rod and wooden base
- Mirror adjusts to prevent parallax error
- A hook attached to the rod supports a coiled spring with mass hanger and indicator



Cat. No.	Description	Quantity	Unit of Measure
S96529	Hooke's Law Apparatus	1	Each

Eisco™ Hooke's Law Apparatus with Weights

Hooke's Law Apparatus with Weights is useful in helping students understand the linear relationship between force and extension.

- Features an adjustable, 15 cm metal scale
- Includes (2) Springs and (9) 10 g weights
- Horse shoe shaped cast iron stand for stability
- Overall Height: 13 in. tall



Cat. No.	Description	Quantity	Unit of Measure
S27660	Hooke's Law Apparatus	1	Each

Eisco™ Helical Spring Set

Demonstrates the extension of a spring in relation to the force applied to it.

- A helical spring has rings at both ends
- Three masses included: 1.1 lb. (500 g), 4.4 lb. (2,000 g) and approximately 0.52 lb. (237 g)
- All masses have double hooks



Cat. No.	Description	Quantity	Unit of Measure
S96185	Helical Spring and Mass Set	1	Each



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Eisco™ Visual Scientifics Physical Science System Base and Pendulum



A system that allows students to use all technologies available to learn physics through technology, engineering and real-world applications.

Base (S06893)

A large, robust base with precise magnetic and threaded mounting locations helps students set up experiments easily and quickly with reproducible results.

- Large, magnetic base for sturdily attaching experiments
- High-contrast color grid for easy data collection with video analysis systems
- Each junction in the grid accepts threaded rods for accurate mounting
- Dimensions: 25 x 16 x 2.5 in. (63.5 x 40.6 x 6.35 cm)
- Accepts any probeware system
- Grade 9 to 12

Ballistic Pendulum (S06895)

A great demonstration or experiment as students try to derive the velocity of a ball leaving the launcher. Students can calculate velocity and test their calculations using this system with separate video or probeware system.

- Main Lab: find the velocity
- Extension One: photogate verification of muzzle velocity
- Extension Two: damped simple harmonic motion
- Covers 10 Next Generation Science Standards Concepts
- Covers 17 Common Core Standards
- 27 pages total
- Student workbook is a guide for students to fill out as they work through the main lab and lab extensions
- General Theory Section lays out the theory and mathematics behind the lesson plan
- Experimental Teaching Guide helps teachers prepare lesson plans and lead inquiry or step-based activities
- All labs and extensions include recommendations for video analysis setups
- For use with Physical Science System Base (S06893)

S06895 Includes:

- Spring-loaded launcher, rigid-arm pendulum with barrel, measuring board, ball, small metal rod with handle, extensive instructions to assist with lesson planning, student activities and experimental procedures

Requires: Safety glasses (not included)

Cat. No.	Description	Quantity	Unit of Measure
S06893	Physical Science System Base	1	Each
S06895	Ballistic Pendulum	1	Each

Heat & Thermodynamics

United Scientific™ Heat Transfer Apparatus



Heat Transfer Apparatus allows students to investigate the transfer of heat by conduction between two heat reservoirs.

- The kit includes two plastic foam calorimeters with lids, a U-shaped aluminum bar which acts as a 'heat bridge', two digital thermometers for tracking the temperature changes in the masses of water held inside the calorimeters, and an activity guide
- The calorimeters hold up to 200 mL of liquid and the digital thermometers measure temperatures between 50°C and 150°C with a precision of 0.1°C
- The aluminum bridge has a cross sectional area of 122 mm² and is about 200 mm long between the liquid reservoirs (the exact length can vary, depending on the volumes of water used)



Cat. No.	Description	Grade	Quantity	Unit of Measure
S00331***	Heat Transfer Apparatus	Pre-K to 12	1	Each

Eisco™ Heat Transfer Kit

Introduces concepts of thermal energy and heat transfer to students.

- Features an aluminum heat transfer bar to demonstrate the migration of thermal energy between two Styrofoam calorimeters



Cat. No.	Description	Grade	Quantity	Unit of Measure
S12996	Heat Transfer Kit	7 to 12	1	Each

Eisco™ Ice Melting Plates Kit

Use the Ice Melting Plates Kit to learn about the concepts of heat and thermodynamics.

- Aluminum plate melts ice faster than plastic foam plate even though they have equivalent temperatures displaying quizzical properties when an ice cube melts.
- Tool for demonstration of conductivity and heat transfer.
- Dimensions (L x W x H): 11.4 x 11.4 x 6.3 cm (4.5 x 4.5 x 2.5 in.)



Cat. No.	Description	Grade	Quantity	Unit of Measure
S12999	Ice Melting Plates Kit	6 to 12	1	Each



United Scientific™ Heat Conductometer

Heat Conductometer demonstrates differences in heat conductivity of aluminum, brass, steel, nickel, and copper.

- Used to teach concepts of transmission of heat, conductors and insulators, conductivity of a material, and the relation between conductivity and atomic structure.
- Features five radial spokes attached to brass hub.
- Each rod is marked with metal name on the hub for identification.
- Notches in each rod to contain wax pellet.
- Unit comes assembled with supply of wax and activity guide.
- Overall dimensions: 38 x 20 x 2.5 cm (14 x 7 x 1 in.)
- Grade: 5+



Cat. No.	Description	Quantity	Unit of Measure
S12874	Heat Conductometer	1	Each

Ice Melting Set

Two black blocks simply and quickly demonstrate differences in heat conductivity.

- One block is made from aluminum, which is an excellent conductor of heat
- The second block is made from plastic foam, which is a poor conductor of heat
- Place an ice cube on each block and watch as one quickly melts away
- The rim on each block prevents spillage



Cat. No.	Description	Quantity	Unit of Measure
S68112	Ice Melting Kit	1	Each

Eisco™ Glass Steam Trap

Has tubes located at each end.

- Made with high quality borosilicate 3.3 glass
- Tubes are located at each end
- Overall Length: 7.5 in.
- Center Diameter: 1 in.
- Stem Diameter: 0.5 in.
- Stem Length: 1.25 in.



Cat. No.	Description	Grade	Quantity	Unit of Measure
S27682	Glass Steam Trap	7 to 12	1	Each

Eisco™ Block Style Calorimeters

Used to determine the specific heat and heat capacity of different materials.

- Made of high quality materials
- Each 1 kg aluminum block is drilled with two holes
- Large center hole has a diameter of 12.5 mm for a special immersion heater
- Small hole has a diameter of 7.5 mm for a thermometer or temperature sensor
- Grade: 7 to Undergraduate



Cat. No.	Material	Quantity	Unit of Measure
S27678	Aluminum	1	Each
S27679	Milled Steel	1	Each
S27680	Copper	1	Each
S27681	Brass	1	Each

Eisco™ Thermal Conductivity Rods

An excellent tool for use in thermal conductivity experiments.

- Set of 6 rods, each made of a different metal: Iron, Copper, Aluminum, Lead, Brass, and Zinc.
- Rod length: 11.88 in.
- Rod Diameter: 0.13 in.



Cat. No.	Description	Grade	Quantity	Unit of Measure
S27676	Thermal Conductivity Rods	7 to Undergraduate	1	Each

Eisco™ Equal Mass Density Set

Allows students to explore specific gravity, specific heat, density, and mass using a variety of materials including aluminum, brass, nylon, acrylic, and polyvinyl chloride (PVC).

- All cylinders have equal masses and measure 0.5 in. (12.5 mm) in diameter
- Cylinder lengths vary from 0.5 to 4 in.
- Set includes a complete instruction manual that provides a background on density, mass, specific gravity, and specific heat
- Includes inquiry based student activities with capture sheets
- Designed to be used in an educational setting
- Expect tolerances in the $\pm 5\%$ range of any stated dimensions (although they are generally much tighter)
- Includes: 5 cylinders



Cat. No.	Description	Grade	Quantity	Unit of Measure
S27677	Equal Mass Density Set	7 to 12	1	Each

Eisco™ Bimetallic Strip Demonstration



Demonstrates the principles of thermal expansion in metals. Bimetallic Strip Demonstration allows students to understand how bimetallic strips are applied practically in things such as thermometers, thermostats and heating coils.

- Hands on demonstration of expansion differences between various metals
- Single piece non-jointed
- Wooden handle for safe experimentation
- Strip comprised of copper and steel metals
- Includes activity guide
- Dimensions (L x W x H): 12.2 x 7.5 x 4.3 in.
- Grade: 7 to 12

Cat. No.	Description	Quantity	Unit of Measure
S23666	Bimetallic Strip Demonstration	1	Each

Eisco™ Thermal Linear Expansion Replacement Rods



For use with Eisco™ Linear Expansion Apparatus (S23742).

- Dimensions: 9.7 x 0.25 in.
- Sold individually
- Grade: 10 to Undergraduate

Cat. No.	Material	Quantity	Unit of Measure
S27633	Aluminum	1	Each
S27634	Brass	1	Each
S27635	Copper	1	Each

Volume & Density

Eisco™ Equal Mass Metal Cylinders Set

Ideal to study density and specific gravity.

- Set includes five cylinders of varying length but equal mass
- Made of zinc, copper, aluminum, tin and lead



Cat. No.	Description	Quantity	Unit of Measure
S07850	Equal Mass Metal Cylinder Set	1	Each

United Scientific™ Gas Measuring Tube

Made of Borosilicate Glass.

- Closed at the zero end for gas measurement
- Resilient white enamel graduations from 0.5 mL to 50 mL
- Graduated in 0.5 mL intervals



Cat. No.	Description	Quantity	Unit of Measure
S27812	Gas Measuring Tube	1	Each

United Scientific™ Equal Volume Cylinders



Ideal for specific gravity, density, volume and calorimetry experiments.

- Available as individual and set of cylinders
- Made of aluminum, brass, copper, steel, PVC and wood

Cat. No.	Product Type	Material	Quantity	Unit of Measure
S07034	Cylinder Set	Aluminum, Copper, Steel, Brass	1	Each
S07021	Cylinder	Aluminum	1	Each
S07022	Cylinder	Steel	1	Each
S07023	Cylinder	Brass	1	Each
S07024	Cylinder	Copper	1	Each

Eisco™ Square Density Blocks

Perfect for students studying mass, volume, and density.

- Density Block set consists of 9 blocks 1 in. square blocks
- Materials included brass, iron, copper, aluminum, hardwood, softwood, nylon, PVC and acrylic
- Supplied in 5.75 in. x 5.75 in. x 1.25 in. wooden box with hinges and clasp



Cat. No.	Description	Quantity	Unit of Measure
S12916	Density Cube Set	1	Each

Eisco™ Metal Density Cubes Without Hook

Designed for density exploration and experiments.

- Solid cubes, 20 mm each size
- Stamped with element
- Consists of 6 density cubes
- Materials included brass, lead, zinc, copper, aluminum and iron



Cat. No.	Description	Quantity	Unit of Measure
S24860	Density Cubes	1	Each

Eisco™ Density Identification Cylinder

Helps students to identify and figure out mass, volume and density.

- 12 density cylinders
- Wooden holder to keep all cylinders together and organized
- This set contains different metal, plastic, and wooden materials



Cat. No.	Description	Quantity	Unit of Measure
S12924	Cylinder Set	1	Each

Eisco™ Density Metals Variety Set

This 12 Piece Density Metals Variety Set provides learners a wide range of different values to study during density investigation, specific heat, and specific gravity exploration.

- Variety set includes an assortment of shapes and sizes
- Includes 2 of each metal - Brass, Iron, Aluminum, Copper, Zinc & Lead
- Masses range from 12 to 25 grams
- Some oxidation or corrosion due to humidity and storage may occur due to the nature of the raw materials
- Simply scuff any oxidation off to make the item look brand new again
- Not fabricated using ultra high precision machining
- Designed to be used in an educational setting



Cat. No.	Description	Quantity	Unit of Measure
S27641	Metal Blocks Set	1	Each

Eisco™ Density Cube Set

Density Cube Set includes 7 different metal cubes for use in educational applications in all grade levels including density investigation, specific heat, and specific gravity exploration.

- Set includes one of each material: Brass, Lead, Iron, Copper, Aluminum, Zinc, Tin
- Supplied with a plastic snap top case for convenient storage
- Each cube features an element stamp for easy identification
- Cubes measure 19 mm (0.75 in.) on each side
- Due to the nature of raw metals, some oxidation or corrosion due to humidity and storage may occur
- Simply scuff any oxidation off to make cube look brand new again
- Expect tolerances in the $\pm 5\%$ range of any stated dimensions
- Designed for use in an educational setting



Cat. No.	Description	Quantity	Unit of Measure
S15106	Density Cube Set	1	Each

United Scientific™ Density Cube Sets

Demonstrate a variety of densities with equal sized cubes.

- Each set includes one cube of each material for density studies
- Each cube in the set has equal dimensions
- **S23978 includes:** One each of acrylic, oak, pine, poplar, steel, aluminum, copper, brass, nylon, PVC, lignum vitae, and polypropylene cubes; Plastic storage box
- **S23979 includes:** One each of acrylic, oak, pine, poplar, steel, aluminum, copper, brass, nylon, and PVC cubes packaged in wooden storage box and a reference table

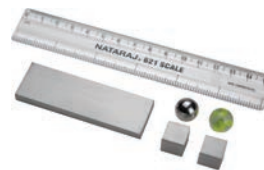


Cat. No.	Description	Quantity	Unit of Measure
S23978	Plastic Storage Box	1	Each
S23979	Wooden Storage Box	1	Each

United Scientific™ Density Kit

This kit is ideal for teaching students how to make measurements in the metric system.

- Apply measurements to determine density using the formula $\text{Density} = \text{Mass}/\text{Volume}$
- Includes metric ruler, aluminum bar (76 x 25 x 6 mm), aluminum cube (13 mm), steel sphere (13 mm) and glass sphere (13 mm)



Cat. No.	Description	Quantity	Unit of Measure
S81069	Density Kit	1	Each

Eisco™ Aluminum Density Set

The Aluminum Density Set is a classic experiment for young minds to demonstrate that density does not change regardless of volume and shape.

- 12 Rods varying in length from 1.5 in. to 2.625 in.
- To determine the density of the material the student plots mass versus volume and the slope therefore is the density (mass per unit volume)
- Students will need to do all measurements themselves so a balance and ruler are required
- Base is made from a durable wood coated for years of use
- Machined from top quality raw materials to produce accurate results and durability of decades of use
- **Includes:** wooden holder



Cat. No.	Description	Quantity	Unit of Measure
S12922	Aluminum Density Set	1	Each

Eisco™ Specific Gravity Metal Cylinder Set

A set of four different metal cylinders.

- Made of aluminum, zinc, copper, and steel
- L x diameter: 38 x 10 mm
- Supplied in plastic box



Cat. No.	Description	Quantity	Unit of Measure
S12803	Specific Gravity Cylinder Set	1	Each

Eisco™ Specific Gravity Cubes

Investigate a range of specific gravities.

- 0.79 in. (20 mm) cubes with hooks
- Set includes brass, iron, aluminum and zinc cubes



Cat. No.	Description	Quantity	Unit of Measure
S99390	Specific Gravity Cubes	1	Each

Eisco™ Displacement Vessel

Displacement Vessel for specific gravity experiments.

- Medium sized
- Includes: spout, graduation to 250 mL
- Material: polypropylene



Cat. No.	Description	Quantity	Unit of Measure
S24871	Displacement Vessel	1	Each

Waves, Sound & Light

Sound, Light, and Optics Student Learning Guides with Online Lesson



Ideal blended learning solutions for use in the classroom or for remote learning/home study.

- Colorfully-illustrated student learning guide provides 36 pages featuring self-directed readings, easy-to-follow illustrated explanations, guiding questions, a lab investigation, key vocabulary review, and assessments
- Also includes one year access to a corresponding multimedia lesson for a teacher and all their students. Each lesson features animated narrated tutorials, interactive exercises and activities, virtual lab investigations, illustrated narrated glossary, visual resource library, and an inquiry-based student activity guide
- Developed under sponsorship of the National Institutes of Health (NIH) the lessons are perfect for individual student instruction on any computer or tablet as well as classroom presentation on any interactive whiteboard.
- Grade: 6 to 10



All About Sound Student Learning Guide with Online Lesson (S436040)

- **Covers:** Introduction to Waves, Waves: Length and Frequency, Wave Interactions, Sound Waves, Aspects of Sound, Doppler Effect, Hearing Sound, Musical Sounds, and Applications of Sound Waves

Light and Optics Student Learning Guide with Online Lesson (S436041)

- **Covers:** Introduction to Light, The EM Spectrum, Transmission of Light, Light and Color, Interactions with Light, Reflections and Mirrors, Refraction and Lenses, Light and the Human Eye, and Light in Technology

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S436040	All About Sound Student Learning Guide with Online Lesson	1	Each
S436041	Light and Optics Student Learning Guide with Online Lesson	1	Each

Kemtec™ Light and Sound Activity Stations

Activities help teach middle school students to explain phenomena they observe in terms of the properties of light and sound.



- Includes a wave simulator students can build, activities for modeling the reflection, refraction, and absorption of light, and activities for exploring the relationship between vibration and sound
- Students explore the electromagnetic spectrum, mirrors, prisms, lenses, and digital and analog signaling
- Includes extension activities for demonstrating proficiency
- Meets National Standards for grades 6 to 8

Cat. No.	Description	Quantity	Unit of Measure
S27536	Light and Sound Activities	1	Each

Science Cube Kit – Discovering Optics

No matter how complicated a camera, a telescope, or a microscope is, it consists of one or more of these basic elements: mirrors, lenses, and prisms. Explore the principles of reflection, refraction, and the physics of how light works, as you discover all about optics.



- Perfect for group experiments
- Perfect for home schooling
- Save space when storing in reusable plastic snap box
- Ages 7+

Includes:

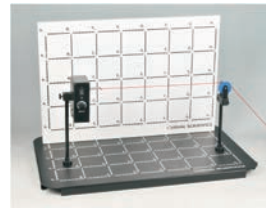
- 1 reusable plastic snap box
- 1 flexible mirror
- 1 cylindrical double concave lens
- 1 cylindrical double convex lens
- 1 small equilateral prism
- 1 small mirror
- 1 laser
- 4 cards
- 1 exploration guide
- Grade 1

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S89519	Science Cube Kits	1	Each

Eisco™ Visual Scientifics Wave Demonstration Set

Introduces the concepts of standing waves, nodes, tension, and speed.



- Helps students understand various concepts like: effect of amplitude of pulse, length, tension and material of spring on speed of pulse
- Includes 10+ page instruction booklet covering approximately two to three hours of class/lab time material, 10+ Next Generation Science Standards concepts, and 10+ Common Core standards
- Every module includes comprehensive instructions to assist with lesson planning, student activities and experimental procedures
- All labs and extensions feature recommended video analysis, setups, and guides

Cat. No.	Description	Quantity	Unit of Measure
S07814	Wave Demonstration Set	1	Each

United Scientific™ Wave Demonstrator Set

Includes two helical springs and a length of cotton string.



- Long, narrow spring measures 0.75 x 72 in., and can be extended to 5 m
- Larger spring measures 3 x 4 in. and can be extended many times its length without distortion

Grade 5+

- Weight: 2.5 lb. (1.1kg)

Cat. No.	Description	Quantity	Unit of Measure
S06685	Wave Demonstrator Set	1	Each

Eisco™ Wave Apparatus

Demonstrate both longitudinal and transverse wave motions.

- Consists of a number of eccentric discs supporting a series of metal rods revolving on a handle
- Transverse waves are obtained from the straight rods and longitudinal waves are obtained from the bent rods



Cat. No.	Description	Quantity	Unit of Measure
S12967	Wave Apparatus	1	Each

Economy Chromatic Set of 13 Tuning Forks

These economy grade tuning forks illustrate the 12-tone "Well Tempered" musical scale, and are individually tested to assure that the proper pitch is achieved.

Includes 1 each of:

- Middle C; 261.53 Hz
- C#; 277.18 Hz
- D; 293.66 Hz
- D#; 311.13 Hz
- E; 329.63 Hz
- F; 349.28 Hz
- F#; 369.99 Hz
- G; 392 Hz
- G#; 415.3 Hz
- A; 440 Hz
- A#; 466.16 Hz
- B; 493.88 Hz
- C; 523.6 Hz
- Comes in an attractive and practical foam lined wooden storage case

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S81831	Tuning Forks	1	Each



Superior Chromatic Set of 13 Tuning Forks

These tuning forks are tuned to Bach's well-tempered musical scale and are made of heavy gauge aluminum.

Includes 1 each of:

- 261.63 Hz 'Middle C'
- 277.18 Hz 'C Sharp'
- 293.7 Hz 'D'
- 311.13 Hz 'D Sharp'
- 329.63 Hz 'E'
- 349.23 Hz 'F'
- 369.99 Hz 'F#'
- 392 Hz 'G'
- 415.3 Hz 'G Sharp'
- 440 Hz 'A'
- 468.16 Hz 'A Sharp'
- 493.88 Hz 'B'
- 523.26 Hz 'C'
- Each tuning fork is calibrated to within ± 1 vibration per second
- Kit comes in an attractive and practical foam lined wooden storage case

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S81832	Tuning Forks	1	Each



Adjustable Tuning Fork

One tuning fork can teach so much and save space. Simply slide the weights on each prong of this tuning fork to deliver tones at in a range of specific frequencies.

Includes 1 each of:

- C: 128 Hz
- D: 144 Hz
- E: 160 Hz
- F: 170.7 Hz
- G: 192 Hz
- A: 213.3 Hz
- B: 240 Hz

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.



Cat. No.	Description	Quantity	Unit of Measure
S81834	Tuning Fork	1	Each

Music Tuning Fork Set of 8 with Activator

This high-quality kit is tuned to correspond to a 'Tempered' C major scale and includes a rubber activator to avoid damaging the forks.

- Material: Aluminum
- Dimensions (L x W x H): 27.9 x 17.5 x 4.6 cm

Includes 1 each of:

- 261.6 Hz, 'C'
- 293.7 Hz, 'D'
- 329.6 Hz, 'E'
- 349.2 Hz, 'F'
- 392 Hz, 'G'
- 440 Hz, 'A'
- 493.9 Hz, 'B'
- 523.2 Hz, 'C'
- Zippered canvas carrying case
- Rubber activator

⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S81836	8 Tuning Forks, Activator, and Case	1	Each



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Aluminum Tuning Fork Set Of 8 with Mallet

NEW

These superior grade tuning forks range from 256 Hz to 513 Hz and are individually tested to assure that the proper pitch is achieved.

Includes 1 each of:

- 256 Hz, 'C'
- 288 Hz, 'D'
- 320 Hz, 'E'
- 341.3 Hz, 'F'
- 384 Hz, 'G'
- 426.6 Hz, 'A'
- 480 Hz, 'B'
- 512 Hz, 'C'
- Includes a rubber tipped mallet to serve as an actuator
- Attractive Styrofoam and foam rubber lined wooden storage box
- Dimensions (L x W x H): 28.3 x 26.3 x 4.4 cm
- Material: Aluminum

⚠ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.



Cat. No.	Description	Quantity	Unit of Measure
S81837	Tuning Fork Set	1	Each

Aluminum Tuning Forks Set of 13 with Mallet

NEW

Tuning forks range from 100 Hz to 4096 Hz. These superior grade tuning forks are individually tested to assure that the proper pitch is achieved.

Includes 1 each of:

- 100 Hz
- 128 Hz, 'C'
- 256 Hz, 'C'
- 288 Hz, 'D'
- 320 Hz, 'E'
- 341.3 Hz, 'F'
- 384 Hz, 'G'
- 426.6 Hz, 'A'
- 480 Hz, 'B'
- 512 Hz, 'C'
- 1024 Hz, 'C'
- 2048 Hz, 'C'
- 4096 Hz, 'C'
- Includes a rubber tipped mallet to serve as an actuator
- Attractive Styrofoam and foam rubber lined wooden storage box
- Dimensions (L x W x H): 28.3 x 26.3 x 4.4 cm
- Material: Aluminum

⚠ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.



Cat. No.	Description	Quantity	Unit of Measure
S81838	Tuning Fork Set	1	Each

Aluminum Superior Grade Tuning Forks

NEW

Individually tested for accuracy.

- Non-magnetic, corrosion-resistant aluminum alloy construction for light weight and durability
- Delivers clear tone, longer sound, and accurate tuning
- Each tuning fork is stamped with frequency and tone

⚠ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.



Cat. No.	Frequency	Quantity	Unit of Measure
S81839	100 Hz, low frequency	1	Each
S81840	128 Hz 'C'	1	Each
S81841	256 Hz 'C'	1	Each
S81842	288 Hz 'D'	1	Each
S81843	320 Hz 'E'	1	Each
S81844	341.3 Hz 'F'	1	Each
S81845	384 Hz 'G'	1	Each
S81846	426.7 Hz 'A'	1	Each
S81847	480 Hz 'B'	1	Each
S81848	512 Hz 'C'	1	Each
S81849	1,024 Hz 'C'	1	Each
S81850	2,048 Hz 'C'	1	Each

Musical Superior Grade Tuning Forks

NEW

Superior performance and consistent frequency accuracy.

- Non-magnetic, corrosion-resistant aluminum alloy construction for light weight and durability
- Delivers clear tone, longer sound, and accurate tuning
- Each tuning fork is individually tested for accuracy and stamped with frequency and tone

⚠ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.



Cat. No.	Frequency	Quantity	Unit of Measure
S81851	261.63 Hz 'C'	1	Each
S81852	293.7 Hz 'D'	1	Each
S81853	349.23 Hz 'F'	1	Each
S81854	341.3 Hz 'F'	1	Each
S81855	369 Hz 'F#'	1	Each
S81856	392 Hz 'G'	1	Each
S81857	440 Hz 'A'	1	Each
S81858	493.9 Hz 'B'	1	Each
S81859	523.3 Hz 'C'	1	Each

Eisco™ Resonant Tuning Fork Set

Demonstrates acoustical resonance and sympathetic vibration.

- Generates 440 Hz vibrations
- Forks mounted on wooden resonance boxes
- Dimensions (L x W x H): 8.66 x 3.93 x 10.23 in. (22 x 10 x 26 cm)



Cat. No.	Description	Quantity	Unit of Measure
S96193	Tuning Fork Set	1	Each

Eisco™ Tuning Forks Set

Demonstrate eight different frequencies with one set.

- Forks vibrate with these frequencies: 256, 288, 320, 341.3, 384, 426.6, 480 and 512 Hz
- Mallets are made with one hard and one soft end
- Cushioned for safe storage
- Set of 8
- Dimensions (L x W x H) 11.81 x 11.41 x 1.57 in. (30 x 29 x 4 cm)



Cat. No.	Description	Quantity	Unit of Measure
S96194	Tuning Fork Set	1	Each

United Scientific™ Optics Set

Explore the world of light reflection and refraction.

Basic optics set can be used by itself or with the current optics experiments.

- Two acrylic lenses (one double convex and one double concave)
- Three mirrors (one convex, one concave and one plane)
- Comes in a wood storage box
- Dimensions (L x W x H) 12.7 x 8.9 x 3.8 cm (5 x 3.5 x 1.5 in.)



Cat. No.	Description	Quantity	Unit of Measure
S66968	Optics Set	1	Each

Eisco™ Enhanced Optical Bench Set

For performing experiments in optics.

- Bench graduated on one side
- Includes halogen lamp



Cat. No.	Description	Quantity	Unit of Measure
S13478	Enhanced Optical Bench Set	1	Each

United Scientific™ Optical Bench Set With Meter Stick

Contains sufficient equipment for high school physics applications.

Contents:

- 1 meter stick
- 1 screen support
- 2 lens supports for 38 mm and 75 mm lenses / mirrors
- 5 board screens measuring 10 x 12.5 cm with a millimeter scale on both sides
- 1 marker and object
- 2 metal supports for meter stick
- 1 candle holder
- 1 paraffin candle



Cat. No.	Description	Quantity	Unit of Measure
S05912	Optical Bench Set with Meter Stick	1	Each

Eisco™ Light Box and Optical Set

For reflection, refraction and color mixing experiments.

Light Box

- Light source produces convergent, divergent or parallel beams
- One end of the box is constructed with adjustable cylindrical convex lens for parallel beams
- Other end has a triple aperture system for color mixing experiments (lateral apertures have an adjustable hinged mirror)
- All apertures designed with vertical channels to hold slit plates and color filters

Optical Set

- Two black plates supplied with three narrow slits at one end and one narrow slit at the other
- Third black plate provides four narrow slits at one end and one wide slit at the other
- Set of seven mounted color filters



Cat. No.	Description	Quantity	Unit of Measure
S96022	Light Box And Optical Set	1	Each

Kemtec™ Light & Color Kit

Includes fourteen activities and four demonstrations to introduce students to the properties of light.

- Kit includes fourteen activities and four demonstrations
- Introduce properties of waves, properties of light, and the electromagnetic spectrum
- Includes reflection of light, pool reflections, reflection from plane mirrors, reflection from concave and convex mirrors, refraction through concave and convex lenses
- Students can use a prism to separate white light into the colors of the visible spectrum
- Teaches how reflection determines color, mixing primary colors of light, and mixing the primary colors of pigments
- Includes the materials needed for a station-based investigation: reproducible student data sheets, assessment questions, and answer keys
- Addresses national standards for grades 5 to 8



Cat. No.	Description	Quantity	Unit of Measure
S30805	Light & Color Kit	1	Each

Eisco™ Newton's Color Disc

Rotating multicolored disc demonstrates that white light is composed of all the spectral colors.

- Multicolored disc is mounted on a driving wheel secured to a metal stand
- Hand crank drives the belt that rotates the color wheel
- Disc dia.: 7.1 in. (180 mm)



Cat. No.	Description	Quantity	Unit of Measure
S99384	Newton's Color Disc	1	Each

Eisco™ Equilateral Prisms

Experiment with diffraction, spectrum formation, and more. Ideal for studying the spectrum of light in a kinesthetically and visually effective manner.

- Made with clear acrylic
- Polished on all faces
- Designed for use in optical experiments
- Will create a nice rainbow
- Length: 100 mm
- Face Size: 25 mm



Cat. No.	Description	Quantity	Unit of Measure
S23677	Equilateral Prism	1	Each

Eisco™ Acrylic Equilateral Prism

Experiment with diffraction, spectrum formation, and more. Ideal for studying the spectrum of light in a kinesthetically and visually effective manner.

- Acrylic
- Equilateral
- Perform science experiments with a durable non-glass prism



Cat. No.	Description	Quantity	Unit of Measure
S23678	Equilateral Prism	1	Each

Eisco™ Acrylic Equilateral Refraction Prism

Experiment with diffraction, spectrum formation, and more. Ideal for studying refraction and light in classrooms where glass may be an issue.

- Safe for younger classrooms
- Used for studying refraction and dispersion of light
- Acrylic



Cat. No.	Description	Quantity	Unit of Measure
S23679	Equilateral Refraction Prism	1	Each

Eisco™ Equilateral Prisms

These equilateral prisms are polished on all faces. Designed for use in optical experiments. Prisms will create a nice rainbow.

- Made with optical quality glass or clear acrylic
- Polished on all faces
- Designed for use in optical experiments
- Will create a nice rainbow



WARRANTY: 1 year limited manufacturer

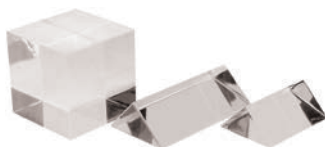
Cat. No.	Length (Metric)	Quantity	Unit of Measure
S41530	50 mm	1	Each
S41531	75 mm	1	Each
S41532	100 mm	1	Each
S41533	150 mm	1	Each

United Scientific™ Acrylic Prism

Provides excellent clarity for optics demonstrations.

Right angle prisms manufactured from acrylic glass.

- Smooth, polished surfaces
- Available in a variety of sizes
- Acrylic Glass



Cat. No.	Length	Thickness	Quantity	Unit of Measure
S81067	50 mm	25 mm	1	Each
S14900	67 mm	47 mm	1	Each
S14901	75 mm	25 mm	1	Each

United Scientific™ Glass Equilateral Prism

This prism is of high quality and easy to use.

Equilateral prisms made from high quality glass sheet.

- Highly polished surfaces
- Easy to use



Cat. No.	Length	Thickness	Quantity	Unit of Measure
S14902***	25 mm	25 mm	1	Each
S14903***	75 mm	25 mm	1	Each
S14904***	100 mm	25 mm	1	Each
S14905***	150 mm	25 mm	1	Each

United Scientific™ Prism and Lens Set

Teach a wide variety of optical principles.

Glass and acrylic sets each have seven components.

- Double convex lens
- Double concave lens (can be used together with double convex lens)
- Semicircular lens
- Trapezoidal prism
- Small right-angle prism
- Equilateral prism
- Large right-angle refraction prism

Specifications:

- Housed in a wooden case
- Shipping weight: 2 lb. (0.9 kg)
- Box dimensions: 9.25 x 8 x 2 in. (23.1 x 20 x 5 cm)



Cat. No.	Description	Quantity	Unit of Measure
S90324	Acrylic Prism and Lens Set	1	Each

Eisco™ Universal Mirror

Helps students perform experiments using light rays with plane, concave, and convex mirrors.

- Made from stainless steel



Cat. No.	Description	Quantity	Unit of Measure
S24359	Universal Mirror	1	Each

United Scientific™ Double Convex Lens

High quality and safe for students.

- Made from plate glass
- Carefully ground and polished optical surfaces, and cleanly ground edges
- Dimensions (L x W) 75 mm dia./175 mm FL



Cat. No.	Description	Quantity	Unit of Measure
S81063	Double Convex Lens	1	Each

United Scientific™ Flexible Acrylic Mirrors

Flexible, double-sided, acrylic mirrors.

- Available in various sizes and assortments



Cat. No.	Dimensions	Quantity	Unit of Measure
S07369	4 x 6 in.	3	Pack
S07370	8.5 x 11 in.	4	Pack



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Vernier Science Education™ Optics Expansion Kit

Add this kit to your Dynamics Cart and Track System to conduct optics experiments, such as image formation with lenses and light intensity vs. distance. You can even use the kit to build a basic telescope.



- Combination LED point and luminous light source with power supply
- Three lenses integrated with holders (100, 200, and 150 mm focal length)
- Screen and holder
- Light sensor holder
- Aperture screen and holder
- Power supply
- The parts of the Optics Expansion Kit snap on to the track, so that the parts can be left in place while the track is moved. The three lenses are permanently mounted in three plastic supports. The light source is LED-based, so that it uses less energy and is cool to the touch. A rotating disc on the light source gives you the option of a radiant object, a point source, an L with 2 by 1 cm dimension, and parallel lines for resolution experiments. The power supply is the same as the LabQuest power supply. An additional aperture plate is included for experiments based on lens diameter and shape.

WARRANTY: 5 year limited

Cat. No.	Description	Quantity	Unit of Measure
S16054ND	Optics Expansion Kit	1	Each

United Scientific™ Laser Pointer

Laser pointer designed with safety in mind.

Economical laser pointers are useful for many optical experiments.

- Ideal for middle school and high school classrooms
- Lasers operate on a push-button switch, are housed in a rubberized aluminum pen-style case, and include a pocket clip
- Class 2 Red laser pointer has a maximum output of 1 mW and a wavelength of 650 nm (± 10 nm)
- Class 2 Green laser pointer has a maximum output of 1 mW and a wavelength of 532 nm (± 10 nm)



Cat. No.	Color	Quantity	Unit of Measure
S00354***	Red	1	Each
S00355***	Green	1	Each

United Scientific™ Laser Pointer with Holder

NEW

Students can securely hold a laser pointer at any angle, and the clip can hold the toggle button in the "on" position for extended demonstrations and experiments.

- The laser support rod is 8 in. long and has a vinyl coated clip to hold the laser pointer securely without scratching
- The heavy cast iron base is 4 x 6 in. with black enamel finish
- The 18 in. long zinc-plated steel rod has a diameter of 5/16 in.
- The swivel clamp gives you the freedom to adjust the angle of the laser pointer 360°
- The clamp is plated steel and accepts rods up to 3/4 in. diameter (19 mm)
- Length across clamps is 4.5 in.
- The red laser pointer operates on a push-button switch and is housed in a rubberized aluminum pen-style case
- The laser is Class 3R and is 6 in. long x 0.5 in. diameter
- Red laser pointer has a maximum output of 5 mW and a wavelength of 650 nm (± 10 nm)
- Range of beam is 100 meters
- Expected operating life is 1,000 hours
- Operates on two AAA batteries (which are included)
- Grade 5 to 12



⚠️ ALERTS: CHOKING HAZARD. Small parts. Not for children under 3 yrs.

Cat. No.	Description	Quantity	Unit of Measure
S89543***	Laser Pointer with Holder	1	Each

United Scientific™ Class 3R Laser Pointers

Ideal for optical experiments.

- Class 3R Laser Pointer with push-button switch
- Ideal for optical experiments
- Housed in rubberized aluminum
- Pen-style case with pocket clip
- Dimensions (L x D): 6 x 0.5 in.
- Maximum Output: 5 mW
- Wavelength: 532 nm
- Operates on (2) AAA batteries
- Available in Red, Green, and Red/Green



Cat. No.	Description	Quantity	Unit of Measure
S27840***	Red	1	Each
S27811***	Green	1	Each
S27797***	Red/Green	1	Each



Eisco™ Quantitative Spectroscope

A quantitative spectroscope for measuring wavelength and color of light.

- Diffraction grating with series of parallel slits; 500 lines/mm separates white light into its spectrum
- Measures wavelengths from approximately 400 to 700 nm
- Accuracy of ± 5 nm for precise measurement
- Versatile for measuring spectras emitted from gas tubes, flame tests and basic astronomy applications



Cat. No.	Description	Quantity	Unit of Measure
S07816	Quantitative Spectroscope	1	Each

Mounted Spectroscope

Observe the visible line spectra of metals and gases, as well as the absorption spectra of solutions and gases.

- Replica diffraction grating instrument with a scale shows the approximate wavelengths in nanometers
- Identify elements when vaporized by heat
- Identify colored solutions which produce absorption spectra
- View prominent Fraunhofer lines
- One-piece aluminum casting serves as the body of the spectroscope
- Diffraction grating replica of 15,000 lines per inch
- Use any convenient light for illumination
- Wavelength: 380 to 720 nm



Cat. No.	Description	Quantity	Unit of Measure
S42550	Spectroscope with Tripod	1	Each

Eisco™ Economy Spectroscope Tubes

Designed to let students look through a slit spectrum of light decomposed by an optical system. Students can quickly identify constituent wavelengths of visible light in many sources.

- Basic spectroscopes able to view variable light spectra
- Resulting spectra as viewed through the grating introduces students to many properties of visible light and optics
- Hold it up to different lights to observe which wavelengths are present
- Light enters through the slit and is split by the diffraction grating at the other end
- Perfect activity for students at school or kids at home
- An adjustable thin slit cap rotates to produce diffraction patterns in the desired direction



Cat. No.	Description	Quantity	Unit of Measure
S14007	Spectroscope Tubes	15	Pack

United Scientific™ Spectrum Tube

The classic demonstration of spectral lines.

Acquaint students with the spectra of common gases in their pure form while demonstrating concept of wavelength.

- 25 cm (10 in.) long
- Capillary portion about 4 in. (10 cm) long
- Grade: 5 to 12

Note: For intermittent use only; 30 seconds on requires 30 seconds off while in use.



Cat. No.	Description	Quantity	Unit of Measure
S06994	Hydrogen Spectrum Tube	1	Each
S06995	Helium Spectrum Tube	1	Each
S06996	Neon Spectrum Tube	1	Each
S06997	Oxygen Spectrum Tube	1	Each
S06998	Water vapor Spectrum Tube	1	Each
S06999	Air Spectrum Tube	1	Each
S07003	Krypton Spectrum Tube	1	Each
S07004	Xenon Spectrum Tube	1	Each

Eisco™ Spectrum Tubes

For demonstrating spectral lines of pure substances.

- For power supplies holding 26 cm spectrum tubes
- Features large 10 cm capillary in center for greater viewing area
- For operation intervals of 30 seconds: 30 seconds on and 30 seconds off
- For intermittent use only, not to be used as lamp source



Cat. No.	Description	Quantity	Unit of Measure
S13011	Carbon Dioxide Spectrum Tube	1	Each
S13009	Nitrogen Spectrum Tube	1	Each
S24910	Iodine Spectrum Tube	1	Each
S13012	Hydrogen Spectrum Tube	1	Each

For intermittent use only, not to be used as a lamp source.

Eisco™ Spectrum Tube Power Supply

The main use of this safe, economical and fun spectrum tube power supply is to provide a view of gas discharge spectral lines that can be viewed with something as simple as a diffraction grating, to as complicated as digital spectrometers.

- Black panel behind the tube eliminates distracting ambient light and protects tube from breakage
- Specially designed box holds tube firmly, preventing student from touching electrodes
- Suitable for 10.25 in. (26 cm) long spectrum tubes
- Voltage: 120 V



CERTIFICATION: CSA, CE, CUS

Cat. No.	Description	Quantity	Unit of Measure
S96205	Spectrum Tube Power Supply	1	Each

Vernier Science Education™ Spectrum Tube Single Power Supply

Energizes a single tube to simply view gas discharge spectral lines with any Vernier spectrometer.

- No exposed high voltage
- Energize one tube at a time
- Storage space for an additional six tubes
- Grades 9 and up
- Includes spectrum tube fiber optic holder
- Gas spectrum tubes sold separately



Cat. No.	Description	Quantity	Unit of Measure
S16017ND	Spectrum Tube Single Power Supply with Holder	1	Each

Eisco™ Crook's Radiometer

Crook's Radiometer comprises partly evacuated glass bulb containing a fine pivot at its center, which supports 4 light weight metal arms.

- Glass bulb approx. 70 mm dia.
- One side of each vane is blackened, the reverse side is bright.
- Mounted on round base
- Grades 6 to 12



Cat. No.	Description	Quantity	Unit of Measure
S99344	Radiometer	1	Each

Complete E/M Apparatus for the Electron

Have your students measure the ratio of charge to mass for an electron.

- Provides transverse magnetic field
- The accelerating voltage can be varied from 100 to 500 VDC and the current varied from 0–3A DC to provide a wide variety of beam energies and deflection fields
- Accelerating voltage and deflection current values are displayed on three-digit panel meters that allow quick and precise measurements
- Voltage and current power supplies are controlled by an onboard microprocessor to ensure stable, precise, and highly reproducible results
- Comes completely assembled with the electron tube, Helmholtz coil, and integral current and voltage power supply
- Overall dimensions: 19 x 12 x 14-3/4 in.
- Electrical Requirements: 115 VAC 50/60 Hz



Cat. No.	Description	Quantity	Unit of Measure
S63317ND	E/M Apparatus	1	Each

United Scientific™ Radiation Can Kit

Demonstrate how two identically sized cans absorb and radiate energy differently.

- Includes two cans: one smooth metal can w/screw cap and one black metal can
- Thermal radiation emitted by two cans cools or heats water at different rates



Cat. No.	Description	Quantity	Unit of Measure
S07396	Lamp Assembly	1	Each

Custom-Built Kits for Your Classroom

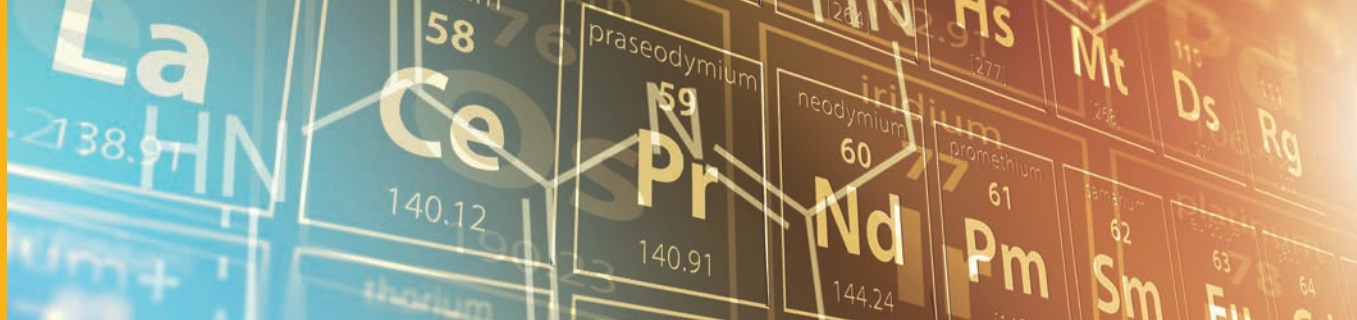
The **Fisher Science Education** team is proud to bring you the convenience of custom educational kits for elementary- to college-level instruction.



- 1 Outline the Project
- 2 Review Your Curriculum
- 3 Develop a Plan
- 4 Align on Production
- 5 Place Your Order
- 6 Await Delivery

Visit fisheredu.com/customkitting to learn more.

 **fisher** science
education
part of Thermo Fisher Scientific



There are more reasons than ever to get your chemicals through the Fisher Science Education channel.

User-Friendly Reference Guide | Easy-to-Read Labels | Industry Standard Storage Plan | Comprehensive Online Resources

Classroom-Friendly Options

Purity Grades for Every Application

- **Lab (or Educational) Grade** — These economical chemicals are of reasonable purity for situations where no official standards for quality or impurity levels are required
- **Reagent Grade** — The highest quality commercially available for this chemical; the American Chemical Society (ACS) has not officially set any specifications for this material
- **ACS Reagent Grade** — Chemicals meet or exceed the latest ACS specifications; designed for analytical applications requiring tighter standards

Quantities to Fit Your Requirements

- Range of pack sizes, including smaller quantities to reduce cost and waste

The Fisher Science Education brand is committed to providing you with comprehensive and reliable resources to use when selecting chemicals for your classroom. Each chemical listing includes the following information (where applicable):

1	Ammonium Dichromate	
2	Ammonium Bichromate; $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$	
3	F.W. 252.06	
4	CAS: 7789-09-5	
5	Color: Orange to red	
6	Solubility in Water: Soluble	
7	Shelf Life: 1 year	
8	DOT Class 5.1, II: Oxidizer	
10	LAB GRADE - CRYSTAL	
11	S25169*	100 g
	S25169A*	500 g
	S25169B*	2 kg
13	 California Proposition 65 WARNING: For more information, visit P65Warnings.ca.gov *WARNING: Cancer **WARNING: Reproductive Harm ***WARNING: Cancer and Reproductive Harm	

- 1 – Chemical Name
- 2 – Synonym(s); Chemical Formula
- 3 – Formula Weight
- 4 – CAS Number
- 5 – Color/Appearance
- 6 – Solubility
- 7 – Shelf Life
- 8 – Department of Transportation (DOT) Classification
- 9 – ChemAlert™ Storage Code
- 10 – Chemical Grade
- 11 – Catalog Number
- 12 – Available Sizes
- 13 – Prop 65 Information

Storage Information at a Glance

Every Fisher Science Education label features one of five color codes to suggest proper chemical storage.



Red — Flammable

Store in area segregated for flammable reagents.



Blue — Health Hazard

Toxic if inhaled, ingested, or absorbed through skin; store in secure area.



Yellow — Reactive and Oxidizing

May react violently with air, water, or other substances; store away from flammable and combustible materials.



White — Corrosive

May harm skin, eyes, and mucous membranes; store away from red-, yellow-, and blue-coded reagents. Store acids and bases separately.



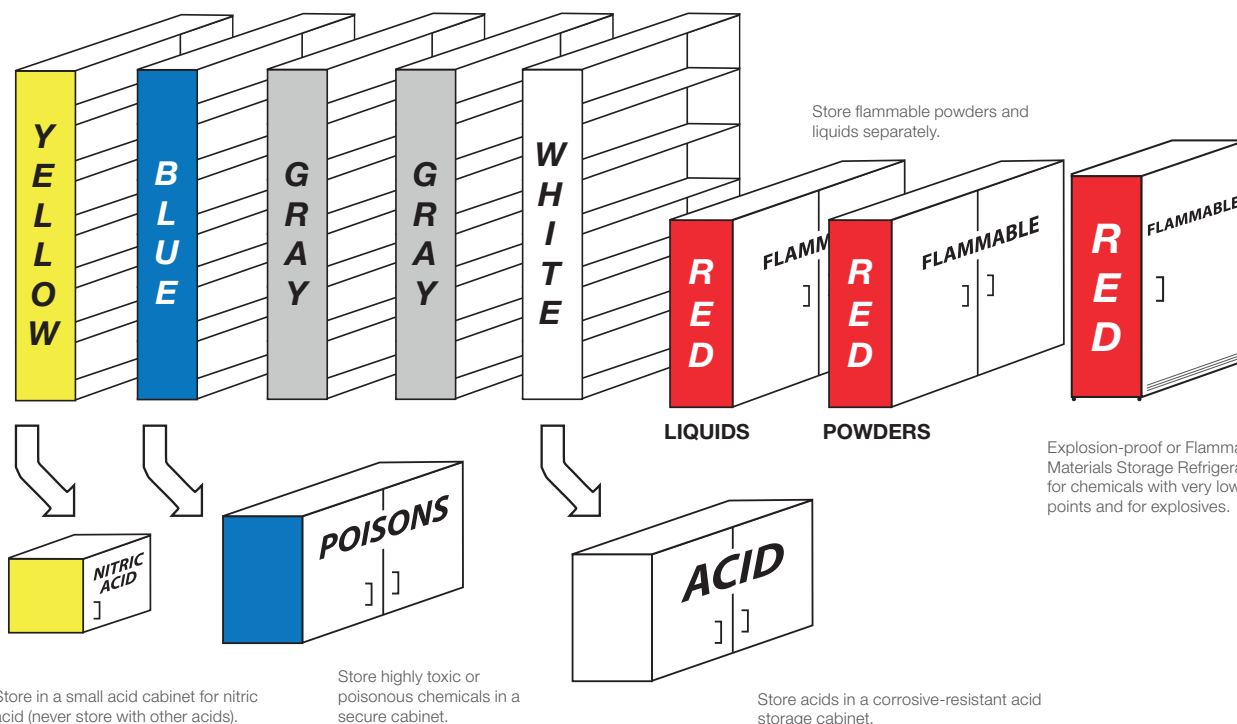
Gray — Moderate Hazard

Presents no more than moderate hazard in any of the hazards previously listed.

IMPORTANT:

- Oxidizers (YELLOW) must be isolated from flammables (RED). It is recommended that all flammables be stored in a dedicated flammables storage cabinet.
- If you store any highly toxic chemicals or severe poisons (BLUE), they should receive special security.
- Avoid any storage on floor or above eye level.
- Storage shelves should have a 3/4 in. lip to help prevent spills.
- Always lock your chemical storage room.

Visit fisheredu.com/chemicals for more safety information and additional resources for your lab.



NOTE: ChemAlert is an instant guide only. It should be supplemented by reading the rest of the label (which provides detailed instructions in the event of accidental exposure, spill, or fire, and applicable OSHA, DOT, and ANSI™ data), the appropriate Safety Data Sheet (SDS) and standard references.

Beginning in June of 2015, the OSHA Globally Harmonized System of Classification and Labeling for Chemicals became the standard on all Fisher Science Education chemical bottles. This new labeling system provides users with a standardized, common approach to classifying chemicals, ensuring that students will find consistent information about the handling and safe use of hazardous chemicals from their first exposure in the classroom, through college, and into their future careers.

1 **Ammonium Dichromate**

2 Lab Grade
CODE: S25169

3 Lot #: **4**
Expires:
Size: 100g

5 **SIGNAL WORD:** Danger

6 Proper Shipping Name:
Ammonium Dichromate

7 UN Identification Number: UN1439

8

12 **HAZARD STATEMENT**
May intensify fire, oxidizer. Very toxic to aquatic life with long lasting effects. Toxic if swallowed. Harmful in contact with skin. Fatal if inhaled. Causes severe skin burns and eye damage. Causes serious eye damage. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause genetic defects. May cause cancer. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.

10 **PRECAUTIONARY STATEMENT**
Keep only in original container. Do not breathe mist/vapors/spray. Wash thoroughly after handling. Wear protective gloves and eye protection. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (OR HAIR): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage. Store locked up. Store in corrosive resistant container with a resistant inner liner. Dispose of contents/container in accordance with local/regional/national/international regulations.

14 **WARNING:** Cancer - www.P65Warnings.ca.gov

13 **CONTAINS:**
Ammonium Dichromate CAS#
7789-09-5

9 **Storage Code Yellow**
Flinn 048 – product does not originate from Flinn Scientific, Inc.

11

11

11 **SDS**
INFO

13

S25169

1 – Chemical Name **5** – Signal Word **9** – Storage Code **11** – QR code – links to chemical online resources

2 – Catalog Number **6** – Proper Shipping Information **10** – Flinn Compatible Chemical Family Code (used with permission of Flinn Scientific, Inc.) **12** – Safety Information

3 – Lot Number **7** – NFPA Information **13** – Contains

4 – Expiration Date **8** – GHS Pictograms **14** – Prop 65 Information

GHS Pictograms



Health Hazard

Carcinogen
Mutagenicity
Reproductive Toxicity
Respiratory Sensitizer
Target Organ Toxicity
Aspiration Toxicity



Flame

Flammables
Pyrophorics
Self-Heating
Emits Flammable Gas
Self-Reactives
Organic Peroxides



Exclamation Mark

Irritant (skin and eye)
Skin Sensitizer
Acute Toxicity
Narcotic Effects
Respiratory Tract Irritant
Hazardous to Ozone Layer (Non-Mandatory)



Gas Cylinder

Gases Under Pressure



Corrosion

Skin Corrosion / Burns
Eye Damage
Corrosive to Metals



Exploding Bomb

Explosives
Self-Reactives
Organic Peroxides



Flame Over Circles

Oxidizers



Environment

Aquatic Toxicity



Skull and Crossbones

Acute Toxicity (fatal or toxic)

ChemAlert™ Storage Codes

Indicate the recommended method of chemical storage.

Every Fisher Science Education label features one of the five following color codes to indicate storage needs.



Red — Flammable

Store in area segregated for flammable reagents.



Blue — Health Hazard

Toxic if inhaled, ingested, or absorbed through skin; store in secure area.



Yellow — Reactive and Oxidizing

May react violently with air, water, or other substances; store away from flammable and combustible materials.



White — Corrosive

May harm skin, eyes, and mucous membranes; store away from red-, yellow-, and blue-coded reagents. Store acids and bases separately.



Gray — Moderate Hazard

Presents no more than moderate hazard in any of the hazards previously listed.

Dot Classifications

The U.S. Department of Transportation (DOT) publishes transportation regulations covering shipments of materials classified as hazardous within the continental United States and its territories. These regulations, covering packaging, marking, labeling, and shipping paper descriptions, are published in 49 CFR Parts 100-185. Materials are classified according to the system listed below.

DOT Hazard Class /Division	DOT Hazard Description
1	Explosives
2.1	Flammable Gas
2.2	Non-Flammable Gas
2.3	Poison Gas
3	Flammable Liquid
4.1	Flammable Solid
4.2	Spontaneously Combustible
4.3	Dangerous When Wet
5.1	Oxidizer
5.2	Organic Peroxide
6.1	Poison
6.2	Infectious Substance
7	Radioactive
8	Corrosive
9	Miscellaneous

NFPA Hazard Code Ratings

The National Fire Protection Association has developed a numerical rating system that reflects the health, flammability, self-reactivity, and other hazards of materials, including reactivity with water, as specified in NFPA 704, Standard System for the Identification of the Hazards of Materials for Emergency Response. Potential hazards are evaluated based on the degree of hazard, and the numerical rating is placed inside the universal NFPA symbol (Included on all Fisher Science Education chemical labels).



NFPA Rating Explanation Guide



RATING NUMBER	HEALTH HAZARD	FLAMMABILITY HAZARD	INSTABILITY HAZARD	RATING SYMBOL	SPECIAL HAZARD
4	Can be lethal	Will vaporize and readily burn at normal temperatures	May explode at normal temperatures and pressures	ALK	Alkaline
3	Can cause serious or permanent injury	Can be ignited under almost all ambient temperatures	May explode at high temperature or shock	ACID	Acidic
2	Can cause temporary incapacitation or residual injury	Must be heated or high ambient temperature to burn	Violent chemical change at high temperatures or pressures	COR	Corrosive
1	Can cause significant irritation	Must be preheated before ignition can occur	Normally stable. High temperatures make unstable	OX	Oxidizing
0	No hazard	Will not burn	Stable	☢	Radioactive
				☞	Reacts violently or explosively with water
				☞OX	Reacts violently or explosively with water and oxidizing

Restrictions on Sale of Chemicals

Chemicals can be sold only to institutions, to full-time educators, and to professionals, on purchase order or organization letterhead. We are not permitted to honor student orders.

A hazardous surcharge will be applied to chemicals that are designated hazardous by the U.S. Department of Transportation at the time of shipment. Certificates of analysis are NOT available for the chemicals featured in this catalog.

Fisher Science Education chemicals are intended to be used **for educational purposes only**.

Physical Sciences Chemicals

Acetic Acid, Glacial

CH₃CO₂H

F.W. 60.05

CAS: 64-19-7

Color: Clear

Solubility in Water: Soluble in water

Shelf Life: 5 years

DOT Class 8 (3), II: Corrosive

ACS GRADE

[S25118B](#) 500 mL[S25118](#) 2.5 L

ACS GRADE, SAFECOTE

[S25118A](#) 500 mL

FLAMMABLE

Acetic Anhydride

Acetic Oxide; (CH₃CO)₂O

F.W. 102.09

CAS: 108-24-7

Color: Clear

Solubility in Water: Soluble in water

Shelf Life: 5 years

DOT Class 8 (3), II: Corrosive

LAB GRADE

[S25119](#) 100 mL

REAGENT GRADE

[S25119A](#) 500 mL

FLAMMABLE

Acetone

2-Propanone; Propanone CH₃COCH₃

F.W. 58.08

CAS: 67-64-1

Color: Clear

Solubility in Water: Soluble in water

Shelf Life: 5 years

DOT Class 3, II: Flammable Liquid

ACS GRADE

[S25120](#) 500 mL[S25120A](#) 4 L

REAGENT GRADE

[S25120B](#) 500 mL[S25120C](#) 20 L

HISTOLOGY GRADE

[S25904](#) 4 L

FLAMMABLE

Aluminum Metal

Al

F.W. 26.98

CAS: 7429-90-5

Color: Silver-gray

Solubility in Water: Insoluble

Shelf Life: 5 years

Reacts with water or moisture

LAB GRADE - GRANULAR, 10 TO 30 MESH

[S25141](#) 100 g[S25141A](#) 500 g

LAB GRADE - METAL STRIPS

[S25146](#) 30/Pk

REAGENT GRADE - PELLETS, 2 TO 5 MESH

[S25150](#) 500 g

MODERATE HAZARD

Ammonium Nitrate

Nitric Acid Ammonium Salt; NH₄NO₃

F.W. 80.04

CAS: 6484-52-2

Color: White

Shelf Life: 2 years

DOT Class 5.1, III: Oxidizer

Explosive under high temperatures

ACS GRADE

[S25172](#) 500 g

LAB GRADE

[S25173](#) 100 g[S25160](#) 500 g

REACTIVE & OXIDIZING

Ascorbic Acid

L-Ascorbic Acid; C₆H₈O₆

F.W. 176.13

CAS: 50-81-7

Color: White to yellow

Solubility in Water: Soluble

Shelf Life: 2 years

REAGENT GRADE - POWDER CRYSTALS

[S25184](#) 100 g

MODERATE HAZARD

Barium Chloride, Dihydrate

Barium Dichloride; BaCl₂·2H₂O

F.W. 244.28

CAS: 10326-27-9

Color: White

Solubility in Water: Soluble in water

Shelf Life: 5 years

DOT Class 6.1, III: Poison

REAGENT GRADE

[S25187](#) 500 g[S25187A](#) 2 kg

HEALTH HAZARD

Benedict's Solution, Qualitative

Color: Clear blue

Shelf Life: 2 years

MODERATE HAZARD

SOLUTION

[S25193](#) 500 mL[S25193A](#) 1 L[S25193B](#) 3.8 L

Biuret Reagent

Color: Clear blue

Solubility in Water: Infinite

Shelf Life: 2 years

DOT Class 8, III: Corrosive

For protein test

CORROSIVE

SOLUTION

[S25200](#) 100 mL[S25200A](#) 500 mL[S25200B](#) 1 L

Bromocresol Green Solution

BCG

Color: Green

Solubility in Water: Infinite

Shelf Life: 18 months

MODERATE HAZARD

0.04% W/V SOLUTION

[S25846](#) 100 mL[S25205](#) 500 mL

Bromothymol Blue Solution, 0.04%

Color: Dark Green

Solubility in Water: Infinite

Shelf Life: 18 months

MODERATE HAZARD

0.04% SOLUTION

[S25207](#) 10 mL[S25207A](#) 100 mL[S25207B](#) 500 mL[S25207C](#) 1 L

Calcium

Calciat; Ca

F.W. 40.08

CAS: 7440-70-2

Color: Silver white

Solubility in Water: Reacts with water

Shelf Life: 2 years

DOT Class 4.3, II: Dangerous When Wet

Reacts with water or moisture

FLAMMABLE

REAGENT GRADE - GRANULAR

[S25216](#) 25 g[S25216A](#) 500 g

REAGENT GRADE - TURNINGS

[S25217](#) 25 g[S25217A](#) 100 g[S25217B](#) 500 g

Calcium Chloride, Anhydrous

Dowflake; CaCl₂

F.W. 110.99

CAS: 10043-52-4

Color: Beige

Solubility in Water: Soluble in water

Shelf Life: 1 year

MODERATE HAZARD

SOLID

[S25223](#) 500 g[S25223A](#) 2 kg

Calcium Chloride, Dihydrate

CaCl₂·2H₂O

F.W. 147.02

CAS: 10035-04-8

Color: White

Solubility in Water: Soluble

Shelf Life: 1 year

MODERATE HAZARD

LAB GRADE - FLAKES

[S25221](#) 100 g[S25221A](#) 500 g

LAB GRADE - POWDER

[S25222](#) 100 g

REAGENT GRADE

[S25222A](#) 500 g

Chromatography Solvent

Petroleum Ether

Color: Clear

Solubility in Water: Insoluble

Shelf Life: 2 years

DOT Class 3, II: Flammable Liquid

FLAMMABLE

LIQUID

[S25253](#) 500 mL

Citric Acid, Anhydrous

β -Hydroxytricarboxylic Acid; $C_6H_8O_7$
 F.W. 192.13
 CAS: 77-92-9
 Color: White
 Solubility in Water: Soluble
 Shelf Life: 1 year

MODERATE HAZARD

LAB GRADE

S25255	100 g
S25255A	500 g

Copper (II) Chloride, Dihydrate

Cupric Chloride, Dihydrate; $CuCl_2 \cdot 2H_2O$
 F.W. 170.48
 CAS: 10125-13-0
 Color: Blue-green
 Solubility in Water: Soluble
 Shelf Life: 1 year
 DOT Class 8, III: *Corrosive*

CORROSIVE

LAB GRADE

S25279B	500 g
REAGENT GRADE	
S25279A	500 g

Copper Sulfate, Anhydrous

Cupric Sulfate; $CuSO_4$
 F.W. 159.61
 CAS: 7758-98-7
 Color: Light gray
 Solubility in Water: Soluble
 Shelf Life: 2 years
 DOT Class 6.1, III: *Poison*

HEALTH HAZARD

REAGENT GRADE - POWDER

S25285	100 g
S25285A	500 g

Copper, Strips

Cu
 F.W. 63.55
 CAS: 7440-50-8
 Copper Sulfate
 Density: 8.94
 Boiling Point: 2595°C (1981.4°F)
 Melting Point: 1083°C (4703°F)

FLAMMABLE

STRIPS

S25911	6 x 1/4 in.
------------------------	-------------

Crystal Violet Solutions**1% - GRAM STAIN**

S25275	100 mL
------------------------	--------

EDTA, Disodium Salt

Ethylenediaminetetraacetic Acid, Disodium Salt Dihydrate;
 $C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$
 F.W. 372.23
 CAS: 6381-92-6
 Color: White

MODERATE HAZARD

Solubility in Water: Soluble in water
 Shelf Life: 5 years

REAGENT GRADE

S25687	25 g
S25687A	100 g

Ethyl Acetate

Acetic Acid Ethyl Ester; $CH_3COOC_2H_5$
 F.W. 88.11
 CAS: 141-78-6
 Color: Clear, colorless
 Solubility in Water: Slightly soluble
 Shelf Life: 2 years
 DOT Class 3, II: *Flammable Liquid*

FLAMMABLE

ACS GRADE

S25305	500 mL
------------------------	--------

Ethyl Alcohol

Ethanol; C_2H_5OH
 F.W. 46.07
 CAS: 64-17-5
 Color: Clear, colorless
 Solubility in Water: Slightly soluble
 Shelf Life: 5 years
 DOT Class 3, II: *Flammable Liquid*

FLAMMABLE

70% DENATURED W/MIBK

S25306	500 mL
S25306A	4 L

95% DENATURED W/IPA AND METHANOL

S25309D	500 mL
S25309E	4 L

95% DENATURED W/MIBK

S25310	500 mL
S25310A	3.8 L

ANHYDROUS, DENATURED W/MIBK

S25307	500 mL
S25307A	1 L
S25307B	4 L

ANHYDROUS, DENATURED, W/IPA AND METHANOL

S25308**	1 L
S25308A**	20 L

LAB GRADE - 95% DENATURED W/IPA AND METHANOL

S25309	500 mL
S25309C	1 L

LAB GRADE - 95% DENATURED W/IPA AND METHANOL; SAFECOTE

S25309A	3.8 L
S25309B	4 L

Ethyl Ether, Anhydrous

$(C_2H_5)_2O$
 F.W. 74.12
 CAS: 60-29-7
 Color: Clear

FLAMMABLE

Solubility in Water: Soluble
 Shelf Life: 2 years
 DOT Class 3, I: *Flammable*

ACS GRADE

S25903L	1 L
S25903	4 L

Ethylenediamine Tetraacetic Acid**ACS GRADE**

S25311B	100 g
S25311	500 g

Ferric Nitrate Solution, 1M

Iron (III) Nitrate Solution
 Color: Pale green
 Solubility in Water: Soluble
 Shelf Life: 1 year

MODERATE HAZARD

REAGENT GRADE

S25320	500 mL
------------------------	--------

Hexanes

C_6H_{14}
 F.W. 86.18
 CAS: 110-54-3
 Color: Clear, colorless
 Solubility in Water: Insoluble
 Shelf Life: 5 years
 DOT Class 3, II: *Flammable Liquid*

FLAMMABLE

ACS GRADE

S25352A	4 L
-------------------------	-----

LAB GRADE

S25352	1 L
------------------------	-----

REAGENT GRADE

S25351	500 mL
------------------------	--------

Hydrochloric Acid Solution

F.W. 36.46
 CAS: 7647-01-0, 7732-18-5
 Density: 1.000

CORROSIVE

Color: Undesignated
 Solubility in Water: Soluble in water
 DOT Class 8, II, : *Corrosive*

0.25M

S25855	500 mL
------------------------	--------

3M

S25856	500 mL
------------------------	--------

6M

S25857	500 mL
------------------------	--------

Hydrochloric Acid Solution, 1.0N

Color: Clear, colorless
 Solubility in Water: Soluble in water
 Shelf Life: 2 years
 DOT Class 8, III: *Corrosive*

CORROSIVE

1N

S25356	500 mL
------------------------	--------

S25356A	1 L
-------------------------	-----

S25908	4 L
------------------------	-----

Hydrochloric Acid, ACS, 12M

Hydrogen Chloride; HCl
 F.W. 36.46

CORROSIVE

CAS: 7647-01-0
 Solubility in Water: Infinite
 Shelf Life: 2 years
 DOT Class 8, II: *Corrosive*

ACS GRADE

S25838	2.5 L
------------------------	-------

ACS GRADE - SAFECOTE

S25358	500 mL
S25838A	2.5 L

Hydrogen Peroxide

Hydrogen Dioxide; H_2O_2
 Color: Clear, colorless

MODERATE HAZARD

Solubility in Water: Soluble

LAB GRADE - 3% SOLUTION

S25359	500 mL
------------------------	--------

S25359A	3.785 L
-------------------------	---------

LAB GRADE - 6% SOLUTION

S25361A	500 mL
-------------------------	--------

LAB GRADE - 6% SOLUTION - STABILIZED

S25361	500 mL
------------------------	--------

Hydrogen Peroxide, 30% SolutionHydrogen Dioxide; H₂O₂

F.W. 34.01

CAS: 7722-84-1

Color: Clear, colorless

Solubility in Water: Soluble

DOT Class 5.1 (8), II: Oxidizer

30% SOLUTION[S25360](#) 500 mL**Iron Filings**

Iron Powder; Fe

F.W. 55.85

CAS: 7439-89-6

Color: Black to gray

Solubility in Water: Insoluble in water

DOT Class 4.1, II: Flammable Solid

FINE[S25369](#) 100 g[S25369A](#) 500 g**LAB GRADE - FINE**[S25369B](#) 500 g**Isopropyl Alcohol**Rubbing Alcohol; (CH₃)₂CHOH

Color: Clear, colorless

Solubility in Water: Infinite

DOT Class 3, II: Flammable Liquid

70% SOLUTION[S25371](#) 500 mL[S25371A](#) 4 L**99% SOLUTION**[S25372](#) 500 mL[S25372A](#) 3.785 L**Lead Nitrate****REAGENT GRADE - CRYSTALS**[S25382](#) 100 g[S25382A](#) 2.5 kg**Lime Water**

Color: Colorless

Solubility in Water: Soluble

SOLUTION[S25386](#) 500 mL[S25386A](#) 3.785 L**Luminol**3-Aminophthalhydrazide.; C₈H₇N₃O₂

F.W. 177.17

CAS: 521-31-3

Color: Yellow

Solubility in Water: Insoluble

SOLID[S25395A](#) 1 g[S25395](#) 5 g**Magnesium Metal**

Mg

F.W. 24.31

CAS: 7439-95-4

Color: Silver White

Solubility in Water: Insoluble in water

DOT Class 4.1, III: Flammable Solid

LAB GRADE - RIBBON[S25397](#) 50 g**TURNINGS**[S25397A](#) 2.5 g[S25411](#) 25 g[S25411A](#) 100 g[S25411B](#) 500 g**Magnesium Sulfate, Anhydrous**Bitter Salt; MgSO₄

F.W. 120.37

CAS: 7487-88-9

Color: Off-white

Solubility in Water: Soluble

SOLID[S25414B](#) 500 g**Manganous Sulfate**

Manganese (II) Sulfate Monohydrate;

MnSO₄·H₂O

F.W. 169.01

CAS: 10034-96-5

Color: Light red

Solubility in Water: Soluble

LAB GRADE[S25422](#) 500 g**Methanol**Methyl Alcohol; CH₃OH

F.W. 32.04

CAS: 67-56-1

Color: Clear, colorless

Solubility in Water: Miscible in water

DOT Class 3, II: Flammable Liquid

LAB GRADE[S25426A**](#) 4 L**REAGENT GRADE**[S25426**](#) 500 mL**Mineral Oil**

Bath Oil

CAS: 8042-47-5

Color: White

Solubility in Water: Insoluble

HEAVY[S25440](#) 500 mL**LIGHT**[S25439](#) 500 mL[S25439A](#) 4 L**Nitric Acid Solution, 15.8M, Concentrated**Hydrogen Nitrate; HNO₃

F.W. 63.02

Color: Clear

Solubility in Water: Soluble in water

DOT Class 8, II: Corrosive

ACS GRADE - NON-SAFECOTE[S25906](#) 500 mL**ACS GRADE - SAFECOTE**[S25449C](#) 2.5 L**pH Buffer Solutions (pH 1 to pH 12)**

Color: Clear, colorless

Solubility in Water: Infinite

pH 1[S25208](#) 500 mL**pH 2**[S25208A](#) 500 mL**pH 3**[S25208B](#) 500 mL**pH 4**[S25208C](#) 500 mL**pH 5**[S25208D](#) 500 mL**pH 6**[S25208E](#) 500 mL**pH 7**[S25208F](#) 500 mL**pH 8**[S25208G](#) 500 mL**pH 9**[S25208H](#) 500 mL**pH 11**[S25208J](#) 500 mL**pH 12**[S25208K](#) 500 mL**pH Buffer Solutions (pH 4.00, pH 7.00, pH 10.00)**

Color: Yellow

Solubility in Water: Infinite

pH 4.0: RED[S25849A](#) 500 mL**pH 7.0: YELLOW**[S25849B](#) 500 mL**pH 10.0: BLUE**[S25849](#) 500 mL**Potassium Chloride**

KCl

F.W. 74.56

CAS: 7447-40-7

Color: White

Solubility in Water: Partially soluble

REAGENT GRADE[S25484](#) 100 g[S25484A](#) 500 g**Potassium Hydrogen Phthalate**Potassium Acid Phthalate; KHC₈H₄O₄

F.W. 204.23

CAS: 877-24-7

Color: White

Solubility in Water: Soluble

SOLID[S25490](#) 100 g

Potassium Iodide

KI
F.W. 166.01
CAS: 7681-11-0
Color: White
Solubility in Water: Soluble

MODERATE HAZARD

LAB GRADE	
S25493C	100 g
S25493D	500 g
REAGENT GRADE	
S25493	25 g
S25493A	100 g
S25493B	500 g

Potassium Iodide Solutions

Color: Clear
Solubility in Water: Infinite

MODERATE HAZARD

0.1M	
S25864	500 mL
0.5M	
S25865	500 mL

Potassium Nitrate

Saltpeper; KNO₃
F.W. 101.11
CAS: 7757-79-1
Color: White
DOT Class 5.1, III: *Oxidizer*

REACTIVE & OXIDIZING

LAB GRADE	
S25494B	500 g
REAGENT GRADE	
S25494	100 g
S25494A	500 g
S25494C	3 kg

Potassium Oxalate, Monohydrate

Oxalic Acid; K₂C₂O₄·H₂O
F.W. 184.24
CAS: 6487-48-5
Color: White
Solubility in Water: Soluble
DOT Class 6.1, III: *Poison*

HEALTH HAZARD

LAB GRADE	
S25496	100 g
S25496A	500 g

Seliwanoff Reagent

Color: Colorless
DOT Class 8, II: *Corrosive*

CORROSIVE

SOLUTION	
S25798	100 mL

Silver Nitrate

AgNO₃
F.W. 169.87
CAS: 7761-88-8
Solubility in Water: soluble
Shelf Life: 5 years
DOT Class 5.1, II: *Oxidizer*

REACTIVE & OXIDIZING

SOLID	
S25525	25 g
S25525A	500 g

Sodium Acetate, Trihydrate

Acetic Acid, Sodium Salt, Trihydrate;
CH₃CO₂Na·3H₂O
F.W. 136.08
CAS: 6131-90-4
Color: White
Solubility in Water: Soluble in water, ether
Shelf Life: 2 years

MODERATE HAZARD

REAGENT GRADE	
S25531	500 g

Sodium Bicarbonate

REAGENT GRADE	
S25533	500 g
S25533B	3 kg
LAB GRADE	
S25533C	500 g
S25533A	2.5 kg

Sodium Bismuthate (V)

NaBiO₃
F.W. 279.97
CAS: 12232-99-4
Color: Yellow/brown
Solubility in Water: Insoluble in cold, decomposes in heat
Shelf Life: 2 years

MODERATE HAZARD

REAGENT GRADE	
S25534	10 g

Sodium Carbonate

Na₂CO₃
F.W. 105.99
CAS: 497-19-8

MODERATE HAZARD

LAB GRADE	
S25539	100 g
S25539A	500 g
S25539D	2 kg
REAGENT GRADE	
S25539B	500 g

Sodium Chloride

Salt; NaCl
F.W. 58.44
CAS: 7647-14-5
Color: White
Solubility in Water: Soluble
Shelf Life: 5 years

MODERATE HAZARD

LAB GRADE	
S25542	500 g
REAGENT GRADE	
S25541	500 g
S25541A	2.5 kg
S25542A	3 kg
S25541B	12 kg
SOLID - ROCK SALT	
S25543	2.5 kg

Sodium Hydroxide

Caustic Soda; NaOH
F.W. 40.00
CAS: 1310-73-2
Color: White
Solubility in Water: Soluble in water
Shelf Life: 2 years
DOT Class 8, II: *Corrosive*

CORROSIVE

LAB GRADE	
S25548B	500 g
REAGENT GRADE	
S25548	100 g
S25548A	500 g
S25548C	1 kg
S25548D	3 kg

Sodium Hydroxide Solution, 0.2M

Caustic Soda
Color: Clear, colorless
Solubility in Water: Soluble in water
Shelf Life: 2 years

MODERATE HAZARD

0.2M	
S25880	500 mL

Sodium Hydroxide Solutions, 1M/1N

Caustic Soda
Color: Clear, colorless
Solubility in Water: Soluble in water
Shelf Life: 2 years
DOT Class 8, II: *Corrosive*

CORROSIVE

1M SOLUTION	
S25549A	1 L

Sodium Hydroxide Solutions,
Various

CORROSIVE

Caustic Soda
Color: Clear
Solubility in Water: Soluble in water
Shelf Life: 2 years
DOT Class 8, II: *Corrosive*

0.5M	
S25881	500 mL
3M	
S25884	500 mL
50% SOLUTION	
S25882	500 mL
6M	
S25883	500 mL

Sodium Nitrate

Chile saltpeper; NaNO₃
F.W. 84.99
CAS: 7631-99-4
Color: White
Solubility in Water: Soluble
Shelf Life: 5 years
DOT Class 5.1, III: *Oxidizer*

REACTIVE & OXIDIZING

LAB GRADE	
S25558	100 g
S25558A	500 g
S25558B	2 kg
REAGENT GRADE	
S25557	500 g

Sodium Phosphate Solution, 0.1M

Color: Clear

Solubility in Water: Soluble in water

MODERATE HAZARD

0.1M

[S25889](#) 500 mL**Sodium Thiosulfate Solution, 0.1M**

Color: Clear

Solubility in Water: Soluble in water

MODERATE HAZARD

0.1M

[S25893](#) 500 mL**Sulfamic Acid**Amidosulfonic Acid; $\text{H}_2\text{NSO}_3\text{H}$

F.W. 97.09

CAS: 5329-14-6

Color: White

Solubility in Water: Soluble

Shelf Life: 12 months

DOT Class 8, III: Corrosive

SOLID

[S25792](#) 50 g**Sulfuric Acid Solutions** H_2SO_4

Color: Clear, colorless

Solubility in Water: Soluble in water

Shelf Life: 2 years

DOT Class 8, II: Corrosive

1N

[S25598*](#) 500 mL

10N

[S25599*](#) 500 mL

1N

[S25598A*](#) 1 L**Sulfuric Acid, Reagent/ACS Grades** H_2SO_4

F.W. 98.07

CAS: 7664-93-9

Color: Clear, colorless

Solubility in Water: Soluble in water

Shelf Life: 2 years

DOT Class 8, II: Corrosive

ACS GRADE - SAFECOTE

[S25597*](#) 500 mL**Vinegar**

Color: Clear, colorless

Solubility in Water: Infinite

Shelf Life: 5 years

LIQUID - CIDER

[S25624](#) 1 L[S25624A](#) 3.8 L

LIQUID - WHITE

[S25623](#) 500 mL[S25623A](#) 3.8 L**Water**

F.W. 18.02

CAS: 7732-18-5

Color: Clear

Shelf Life: 5 years

Use: Not for human consumption

DEIONIZED, TYPE II

[S25293](#) 4 L

DISTILLED

[S25868](#) 1 gal.**Zinc Chloride**Zinc Butter; ZnCl_2

F.W. 136.29

CAS: 7646-85-7

Color: White

Solubility in Water: Soluble

Shelf Life: 1 year

DOT Class 8, III: Corrosive

REAGENT GRADE

[S25635A](#) 100 g[S25635](#) 500 g**Zinc, Granular**

Zn

F.W. 65.38

CAS: 7440-66-6

Color: Gray

Solubility in Water: Reacts with water

Shelf Life: 5 years

REAGENT GRADE - 20 TO 30 MESH

[S25633](#) 500 g**Zinc, Metal Pieces**

Zn

F.W. 65.38

CAS: 7440-66-6

Color: Gray

Solubility in Water: Insoluble

Shelf Life: 5 years

Reacts with water or moisture

PIECES (1 X 1.2 X 0.05 CM)

[S25644](#) 100/Pk**Zinc, Mossy**

Zn

F.W. 65.38

CAS: 7440-66-6

Color: Blue/Gray/White

Solubility in Water: Reacts with water

Shelf Life: 5 years

Reacts with water or moisture

LAB GRADE

[S25636B](#) 500 g

REAGENT GRADE

[S25636](#) 500 g[S25636A](#) 2.5 kg**Zinc, Strips**

Zn

F.W. 65.38

CAS: 7440-20-0

Density: 7.14 g/cm³ at 20°C

Boiling Point: 908°C

Melting Point: 419°C

STRIPS

[S25910](#) 2 x 1/4 in.

CORROSIVE

MODERATE HAZARD

MODERATE HAZARD

MODERATE HAZARD

CORROSIVE

CORROSIVE

CORROSIVE

MODERATE HAZARD

MODERATE HAZARD



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