100 YEARS 1919 2019

LaMotte®

2019 Environmental Science Education Products

Field | Classroom
Outdoor Monitoring | Home School

100 years ago, my grandfather, Frank L. LaMotte, left DuPont to realize his vision for on-site water testing by founding the first US company to design and produce portable water analysis equipment—LaMotte Chemical Products Company in Baltimore, Maryland.

In 1956 LaMotte Company moved across the Chesapeake Bay to the Eastern Shore of Maryland and expanded the offering of innovative field-testing products for water and soil analysis. Educators discovered that the fast and simplified test methods gave reliable, accurate results that were ideal for the field and classroom from the elementary to college level.

As the importance of environmental testing and environmental education became more recognized, the scope of LaMotte environmental testing products grew to include biological testing products and custom kits for citizen monitoring organizations – including our own LaMotte Chester Testers that have been collecting water quality data on the Chester River for 25 years. LaMotte test kits were also approved for use worldwide by programs such as GLOBE and Earth Force. A line of curriculum packages were developed so that students without the opportunity to go into the field could begin to experience the complexities of the environment with samples taken from their homes and analyzed at their desks in the classroom.

100 YEARS 1919 2019

Today, we constantly update our time-tested water quality monitoring kits, sampling equipment and curriculum kits as well as introduce new educational products for the digital classroom. Our goal continues to be to provide the most accurate, innovative and relevant environmental educational products.

It has been a privilege for all of us at LaMotte to earn the trust of an ever-widening audience of educators and to be ever-challenged by their expectations. From all of us, we thank you for 100 years of trust.

Most sincerely,
David H. LaMotte
President

LAMOTTE STANDARDS — Circa 1919

LaMotte Chemical — Circa 1956

LaMOTTE — Circa 1993

Horizontal Water Sampler

Collect water samples quickly and easily! See page 24.

NEW!

Tapwater Tour

What's coming out of your student's tap? Students analyze their tap water and evaluate class results. See page 28.

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LaMotte LaMotte

Circa 2000 Circa 2014

Colorimetric

Octa-Slide 2

Low Range Comparator

Color Chart

Test Strips

Colorimeter

Colorimetric means to measure color. Reagents are added to a sample resulting in a reaction that produces a color, the intensity of which is related to the concentration of the test factor. The test factor concentration is then determined by measuring the color, either visually or electronically.

Visual Methods

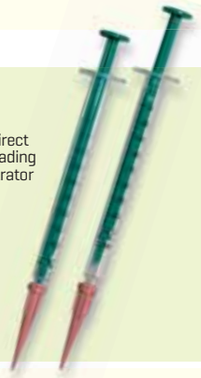
Octa-Slide 2 and Low Range Comparators feature eight color standards with built-in filters that eliminate optical distortion. Laminated color charts offer an inexpensive means of measuring color, and are often used with tablet methods and test strips.

Electronic Methods

Electronic colorimeters or spectrophotometers help eliminate visual inconsistencies and provide a dedicated light source. The light source passes through a sample and is then measured by a photodetector. The results are translated to a digital output in ppm, mg/L, FTU, %T or Absorbance.

Titrimetric

Dropper Bottle


Direct Reading Titrator

Titrimetric analyses are conducted by adding a solution of known strength (the titrant) to a specific volume of a sample in the presence of an indicator. The indicator produces a color change, which shows that the reaction is complete.

Dropper Bottle/Pipet

A pipet or special dropper tip fitted onto the reagent bottle is used to deliver a consistent standard drop size. The number of drops used to complete the reaction in the treated sample is multiplied by a given factor to produce the test result.

Direct Reading Titrator

The Direct Reading Titrator is a 1.0 mL microburet calibrated to allow direct reading of test results. Each titrator has a specific range, but may be refilled to test higher concentrations.

Electronic Meter/Probe

Electronic methods generally use a special electrode for measuring a specific test factor. An electrode is immersed into a sample, and an amplified current or voltage is produced and translated into a digital readout. In a colorimeter, light is passed through a sample and measured by a photodetector.

Shipping Codes & Weight

Shipping codes and weights for shipping are included in this catalog for your convenience. The shipping code will refer to one of the following in the chart below. Weights will be in pounds and enclosed in [ ].

NH	R1	HF	LQ
· Non Hazardous · No Fees	· Small Quantity · Hazardous Materials · No Fees	· Hazardous Materials · Air & Ground Fees	· Hazardous Materials · Air Fees Only

Safety

Have questions about the use of any LaMotte testing or sampling product? Call LaMotte's knowledgeable Technical Service Department at 800-344-3100 or send an email to tech@lamotte.com. Follow all field and laboratory safety guidelines as mandated by your school, center, or education/citizen monitoring program. Specific instructions are provided with each LaMotte test kit and sampling equipment. Be sure to follow these carefully.

Some reagents (or specific volumes of reagents), as determined by federal and state government safety and regulatory agencies, require access to a Safety Data Sheet. To view or print a SDS for these reagents go to www.lamotte.com. To obtain a printed copy contact us by email, phone or fax. Follow all safety precautions and procedures as specified on the SDS.

Additional safety information for all LaMotte reagents is available in the United States, Canada, Puerto Rico, and the US Virgin Islands from Chem-Tel by calling 1-800-255-3924. For all other areas, call 813-248-0585 collect to contact Chem-Tel's International access number. Each reagent can be identified by the 4-digit number listed on the reagent label, in the contents list, and in the test procedures.

WARNING: Products in this catalog are not toys. Adult supervision is strongly recommended. Products may contain ingredients which require additional safety precautions; refer to all safety guidelines and Safety Data Sheets at www.lamotte.com.

LEAD (Pb) weights are used in some hydrometers. Weights should not be handled by children under 14. Adult supervision recommended.

Prop 65: Products that can expose you to chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm. See specific product listings. For more information: www.P65Warnings.ca.gov/product

LaMotte Products for Hydrology & Soil GLOBE Program®

GLOBE Item	Description	LaMotte Code	Shipping
100 mL Graduated Cylinder	100 mL Graduated Cylinder	2-2079	NH (1)
Alkalinity Kit	Water Alkalinity Kit	4491-DR-01	NH (1)
Calibration Solution 718 (µmhos/cm), 120 mL	Conductivity Standard	6417-J	NH (1)
Conductivity Meter	Con 6 Meter	5-0039-02	NH (3)
Conductivity Tester	EC Tester	5-0082	NH (1)
ConductivityTester	pH/Conductivity/Temp TRACER	1766	NH (1)
D-Net	D-Net with pole, 500 micron mesh	0168	NH (7)
Dissolved Oxygen Kit	Dissolved Oxygen Kit	5860-01	R1(2)
Hydrometer Kit	Hydrometer and Jar	3-0025	NH (2)
Hydrometer Jar	Hydrometer Jar	3-0024	NH (1)
Hydrometer	Hydrometer	3-0011	NH (1)
Kick Net	Kick Net, 500 micron mesh	0021	NH (4)
Macroinvertebrate Classroom Activity	Macro Mania	5942	NH (2)
Macroinvertebrate Identification Key	Freshwater Aquatic Macroinvertebrate: Insect Identification Flashcards	5882-SA1	NH (1)
Macroinvertebrate Identification Key	Freshwater Aquatic Macroinvertebrate: Insect Life Cycle & Habitat Flashcards	5946	NH (1)
Macroinvertebrate Identification Key	Macroinvertebrate Identification: Waterproof Illustrated Sorting Sheets (6)	5882-SS6	NH (1)
Macroinvertebrate Sorting Dishes	Petri Dish, 25/bag	31648-25	NH (1)
Nitrate Kit†B (Cadmium)	Nitrate-Nitrogen 0.2 to 1.0 ppm	3615-01	R1 (2)
Nitrate Standard	1000 ppm NO_3–N, 50 mL	5392-H	NH (1)
pH 4 Buffer	pH 4.0 Buffer, 120 mL	2866-J	NH (1)
pH 7 Buffer	pH 7.0 Buffer, 120 mL	2881-J	NH (1)
pH 10 Buffer	pH 10.0 Buffer, 120 mL	2896-J	NH (1)
pH Meter	pH 5 Meter	5-0034-01	NH (3)
pH PockeTester	pH 20 PockeTester	5-0104	NH (1)
pH Tester	pH/Conductivity/Temp TRACER	1766	NH (1)
pH Test Strips	pH Test Strips, 100 strips	3-2950	NH (1)
Salinity Kit†B	Salinity Kit	7459-02	R1 (1)
Secchi Disk, Rope	Secchi Disk with Line	0171-CL	NH (7)
Soil Dispersing**	Soil Dispersing Reagent, 250 g	5184-K	NH (2)
Soil NPK Kit**	Soil Nitrate, Phosphorus, and Potassium Kit	3-5880	NH (1)
TDS Meter	TDS 6 Meter	5-0036-02	NH (3)
Thermometer, Armored	Calibrated Thermometer, -5° to 45°C	1066	NH (1)

**Designed for the GLOBE program

† Prop 65: **C**: ⚠ **WARNING** Cancer - www.P65Warnings.ca.gov/product;
R: ⚠ **WARNING** Reproductive Harm - www.P65Warnings.ca.gov/product;
B: ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

"GLOBE is the quintessentially ideal program for involving kids in science."

— Nobel laureate Dr. Leon Lederman

GLOBE (Global Learning and Observation to Benefit the Environment)

A hands-on, primary and secondary school-based science and education program which unites students, teachers, scientists and community members around the world in study and research about the dynamics of Earth's environment.

The GLOBE Schools Network consists of over a million GLOBE students in more than 20,000 schools located in 109 countries. GLOBE students have reported over 17 million measurements.

www.globe.gov

Code 5-0039-02

Code 5882-SA1

Code 5860-01

THE GLOBE PROGRAM

Also See: Wet Your Waders pg. 7 | Tapwater Tour pg.28 | Funky Faucet pg. 32 | Living in Water pg. 49

NGSS ALIGNED

EARTH FORCE Low Cost Water Monitoring Kit

Grades 3 and up

Order Code 3-5886 | NH (1)

English, Spanish & French Instructions!

Code 3-5886

Designed as a sampler that is a great introduction to any water quality monitoring program. This kit provides hands-on methods using TesTabs® for brackish, fresh or ocean waters. For long-term monitoring or groups consider the Earth Force Standard Water Monitoring kit, Code 5848. Both kits are ideal for volunteer monitoring, too!

- 8 different test factors: pH, dissolved oxygen, biochemical oxygen demand, temperature, turbidity, nitrate, phosphate and coliform bacteria
- manual with step-by-step diagrammed instructions in both English and Spanish
- TesTabs® to test 10 water samples (3 for coliform)
- laminated color chart
- 20-pack case available

EARTH FORCE Low Cost Estuary & Marine Monitoring Kit

Grades 3 and up

Order Code 5911 | NH (1)

Code 5911

Designed to provide simple, economical and non-hazardous methods for testing saline and brackish water.

- same tests as the Low Cost Water Monitoring kit with an additional test for chloride (10) and only two tests for coliform
- 20-pack case available

AP

EARTH FORCE Advanced Water Monitoring Kit

Grade 7 and up

Order Code 5884-01† | HF (18)

Code 5884-01

Contains all the LaMotte water quality test kits featured and supported in the *Field Manual for Water Quality Monitoring* (13th edition) by Mitchell & Stapp, which is the standard text for school-based water quality monitoring programs.

Test Kits Included

Test Factor	Code	Shipping
Dissolved Oxygen	5860-01	R1
Precision pH†	5858-01	R1
Phosphate	3121-02	R1
Auxiliary Phosphate†	7884	HF
Nitrate-Nitrogen†	3110-01	R1
Turbidity	7519-01	N
Thermometer	1066	NH
Field Manual For Water Quality Monitoring (Mitchell & Stapp)	3-1508	NH

See Individual Test Kit section in Water Quality Monitoring section for kit pricing.

† ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

AP NGSS ALIGNED

EARTH FORCE Standard Water Monitoring Kit

Grades 4 and up

Order Code 5848 | NH (7)

Design and implement a river study—from acquiring and reading watershed maps to determining and scheduling study sites. Ideal for community groups/volunteer monitoring. Great teacher resource!

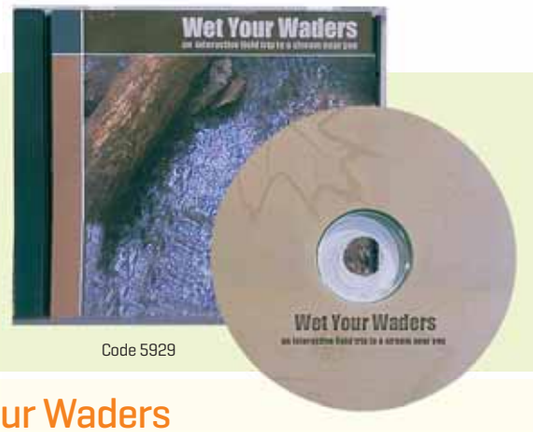
- 9 test factor modules
- macroinvertebrate bonus module
- instruction manual in both English and Spanish
- each module contains easy-to-read diagrammed instructions
- laminated color chart and instruction flashcards
- test factor flashcard
- all necessary apparatus
- TesTabs® to perform 100 tests (44 tests for coliform bacteria; unlimited for benthic macroinvertebrates and turbidity)

Test Modules Also Sold Individually

Test Factor	Code	Shipping
Biochemical Oxygen Demand	5889	NH
Coliform Bacteria	5850	NH
Dissolved Oxygen	5889	NH
Nitrate	5891	NH
pH	5890	NH
Phosphate	5892	NH
Turbidity	5887	NH
Temperature (0-12°C)	31821	NH
Temperature (14-40°C)	31822	NH

English & Spanish Instructions!

Code 5848



Code 5929

Wet Your Waders

Grades 5 and up

Order Code 5929 | NH (1)

A unique companion CD-ROM to the Earth Force Standard Water Monitoring Kit (Code 5848) or any kits using TesTabs®. Take a virtual tour prior to field sampling and testing. Students select a location from an on-screen map and select water quality and macroinvertebrate study techniques that will be used in the field. QuickTime® Virtual Reality transports students to the area they have selected on the watershed and provides a 360 degree view. Students learn the importance of their chosen test and then perform the technique through interactive procedures. A great pre-lab training tool, this interactive CD-ROM is an ideal choice for any class or monitoring group using tablet methods. For Macintosh 8.1 or higher; Windows 95 or higher.

EARTH FORCE Elementary Education Watershed Field Trip Kit

Grades 1-5/30 students

Order Code 5906 | NH (1)

Everything you need to lead your classoom on a fun-filled exploration of a watershed. This kit tells The Watershed Story: an excellent explanation of a watershed and how it relates to nature around us.

- teacher's manual with guidelines on taking a field trip and conducting water quality tests
- perform an actual field study
- data sheets to reproduce
- tests for pH, nitrate, phosphate, and dissolved oxygen using TesTabs®
- includes all reagents and accessories and one activity from Project WET

Code 5906

Developed in cooperation with

STROUD WATER RESEARCH CENTER

English, Spanish & French Instructions!

AP GLOBE NGSS ALIGNED

Leaf Pack Stream Ecology Kit

Students of all ages!

Order Code 5882 | NH (10)

Got bugs in your stream? This complete kit helps students discover the value of macroinvertebrates as living indicators of water quality. A totally reusable and flexible tool, this kit can be adapted for varying time limits, number of students, and grade levels.

- all apparatus included for collecting, sorting, bioindex calculation, and identification
- comprehensive instructor's manual includes:
  - reference guide
  - background material
  - stream ecology experiment ideas
  - field and data sheets to reproduce
  - glossary
  - diagrammed instructions

Code 5882

Aquatic Macroinvertebrates colonize submerged leaves in stream habitats. The ability of freshwater macroinvertebrates to flourish depends upon the properties of the water and conditions in the environment. The relative abundance and variety of freshwater macroinvertebrates can be used as bioindicators to assess the quality of the water and the effects of land use on the environment.

Individual Items Available

Code	Qty	Description
5882-LPB	30	Mesh bags
5882-SA1	1 set	20 full-color Freshwater Aquatic Macroinvertebrate: Insect Identification Flashcards each with photos, line drawings and identification tips. See page 9
5882-SS6	6	Waterproof illustrated sorting sheets
5946	1 set	22-full color Freshwater Aquatic Macroinvertebrate: Insect Life Cycle & Habitat Flashcards. Includes activities. See page 9
5508	1	MacroLens™, 4 inch diameter, 4.5X magnification. See page 10
5882-STR	1	6" Plastic 500 Micron Mesh Seive

Kit Includes

6	Mesh bags
1	Waterproof marker
1	Seive
6	Sorting trays
60	Plastic Petri dishes
6 sorting sheets	Waterproof, illustrated
2	Thermometers
1	Hand-held scale
12	Brushes
12	Spoons

1 set	20 full color flashcards
6	Hand lenses
1	MacroLens™ magnifier
1	Nylon twine
6	Zipper-top bags
1	Tree Finder booklet
1	Instructor's manual with record sheets
2	Rulers
6	Waterproof tags

Also See: D-Net pg. 27 | Kick Nets pg. 27

GLOBE

Freshwater Aquatic Macroinvertebrate Insect Identification Flashcards

Order Code 5882-SA1 | NH (1)

Use this set of 18 full color flash cards alone or as an addition to any macroinvertebrate activity. (Included in the Leaf Pack Experiments Stream Ecology Kit, see pg. 8). The front of each card features a full-color photograph of a common macroinvertebrate in its natural environment. A list of dichotomous characteristics, a measuring scale, and detailed drawings on the back of each card aid in the identification process. Helpful notes prevent confusion between macroinvertebrates with a similar appearance. A hole can be punched in the wide border of the laminated cards so they can be organized on a ring for field or classroom use.

Code 5882-SA1

GLOBE

Freshwater Aquatic Macroinvertebrate Insect Life Cycle & Habitat Flashcards

Order Code 5946 | NH (1)

Help kids understand the life cycle and habitats of freshwater aquatic macroinvertebrates with this set of flashcards and manual. The 22 full-color cards feature photos of both immature and adult insect stages, and detailed life cycle and habitat information. The accompanying manual contains facts on insect characteristics, life cycles, taxonomy, classification, food webs, and how macroinvertebrates can be indicators of water quality. Six activities are included with the cards. The Freshwater Aquatic Macroinvertebrate: Insect Life Cycle and Habitat Flashcards can be used as an extension to the Freshwater Aquatic Macroinvertebrate: Identification Flashcards and the Leaf Pack Experiments Stream Ecology Kit.

Code 5946

Aquatic Bug Kit

Grade 3 and up

Order Code 5950 | NH (1)

A creepy-crawly, wet investigation into the health of any freshwater environment. Following the easy-to-read manual, one to two students collect, observe, sort and identify aquatic insects as a guide for establishing water quality. Students complete the activity at home or spend an afternoon outdoors beside a stream or pond.

- mesh leaf bags for collection
- plastic dishes for sorting
- magnifying lens
- BUGGUIDE—a bug-by-bug description
- BUGBOARD identification chart
- manual, including activities, games and web links

Code 5950

Also See: D-Net with Expandable Pole pg. 27 | Student Grade kick net pg. 27 | Kick Net pg. 27

Code 5942

Developed in cooperation with Global Water Watch

GLOBE NGSS ALIGNED

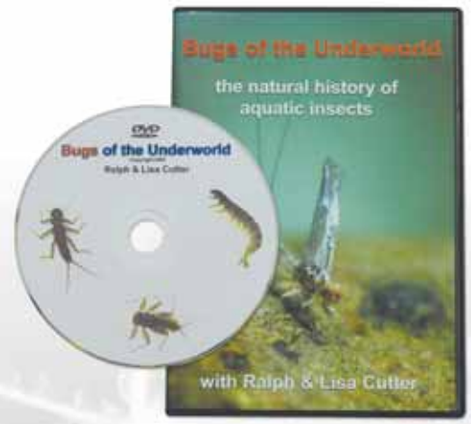
Macro Mania

Grades 3 and up

Order Code 5942 | NH (1)

Expansion kit | (includes 3 decks, 3 sorting sheets)
Order Code 5943 | NH (1)

Macro Mania is a classroom adventure that introduces the use of stream macroinvertebrates to determine water quality. Lecture material sets the scene for the activity. Students will learn about the influence of land use on water quality and the practice of macroinvertebrate sampling to measure water quality. Six teams will be given a deck of macroinvertebrate cards representing a sample of macroinvertebrates from one of three sites, a poster-sized sorting sheet and a map. By sorting the deck of cards onto the sorting sheets, students will determine the water quality at their site from the distribution of macroinvertebrates in their sample. Optional math, public speaking, writing, art and card game extensions will further emphasize the land use/water quality connection. Includes a deck of cards and sorting sheets for six teams. Also includes Macro Mania manual containing background information, step-by-step instructions for activities and extensions. Colorful Macro Mania classroom poster is also included! Manual, cards, and sorting sheets printed in both English & Spanish.



Code 5948

Bugs of the Underworld

Grades 3 and up

Order Code 5948 | NH (1)

A 35 minute DVD film showing the real lives of benthic macroinvertebrates in the wild. The secret lives of macros, such as mayflies, damselflies, midges, caddisflies and stoneflies are revealed for the first time. This film could easily fit into a Discovery Channel, PBS or Animal Planet lineup and took 11 years and 8 cameras to film. Their transformation into winged adults, particularly when viewed from underwater, is a marvel of grace and beauty. Upon viewing, the universal statement among flyfishers and students is "I didn't know that!" These insects are far more than simply trout bait; they profoundly influence the aquatic ecosystem, and their presence is an accurate measurement of stream health and water quality.

For all grades especially if they are doing water quality studies using macroinvertebrates.

Code 5508

MacroLens™

Grades 1 and up

Order Code 5508 | NH (1)
10 pack Order Code 5508-10 | NH (6)

MacroLens with 4.5X magnification covers the entire Petri dish! 4" diameter.

Also See: Wet Your Waders pg. 7 | Tapwater Tour pg. 28 | Funky Faucet pg. 32

Limnology Outfit

Grades 5 and up

Order Code 5902-02† | R1 (13)
Reagent Refill R-5902-01† | R1 (4)

This field-friendly outfit contains all that is needed for testing and studying freshwater systems.

- individual test modules for 7 freshwater test factors
- water sampling bottles
- three handbooks: *Limnology, A Study of Water Quality,* and *Investigating Water Problems*

Octa-Slide 2 Comparator Tests

Test Factor	Range (# Tests)	Kit Codes	Shipping
Nitrate Nitrogen†	0.2-1.0 ppm (40)	3119-01	R3
Phosphate †	0.2-1.0 ppm (50)	3119-01	R3
pH†	3.0-10.5 pH (100)	5858-01	R1
Silica	0.5-10 ppm (50)	4463-01	R1

Direct Reading Titrator Tests

Test Factor	Range (# Tests)	Kit Codes	Shipping
Carbon Dioxide†	0-50 ppm (50)	7297-DR-01	R1
Dissolved Oxygen	0-10 ppm (50)	5860-01	R3
Hardness	0-200 ppm (50)	4824-DR-LT-01	N

† ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Code 5902-02

Marine Science Outfit

Grades 5 and up

Order Code 5903-03† | R1 (13)
Reagent Refill R-5903.02 | R1 (10)

Perfect for testing and studying saline systems (oceans, bays, salt marshes) and brackish water.

- individual test modules for 7 key salt water test factors
- water sampling bottles
- data sheets
- three handbooks: *A Laboratory Manual for Marine Science, Limnology,* and *Investigating Water Problems*
-

Titration Tests

Test Factor	Range (# Tests)	Kit Codes	Shipping
Dissolved Oxygen	0-10.0 ppm (50)	5860-01	R3
Hardness	0-200 ppm (50)	4824-DR-LT-01	R1
Carbon Dioxide†	0-50 ppm (50)	7297-DR-01	R1
Alkalinity	0-200 ppm (50)	4533-DR-01	R1
Salinity†	0-20 ppt (50)	7459-02	R1

Colorimetric Tests

Test Factor	Range (# Tests)	Kit Codes	Shipping
pH	7.7-8.4 (100)	2081-02	R1
pH	3-10.5 (100)	5858-01	R1

† ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Code 5903-03

AP NGSS ALIGNED

The Water Quality Educator & Monitoring Outfit

Grades 5 and up

The Water Quality Educator & Monitoring Outfit (Test kits, *The Monitor's Handbook* and CD)

Order Code 5870-01† | R1 (14)

Start Or Enhance A Monitoring Program!

Reagent Refill for 5870-01

Order Code R-5870† | R1 (3)

The Monitor's Handbook and CD only

Order Code 5872 | NH (1)

Water Quality Monitoring Outfit†

Complete test kits for seven critical water quality test factors. Includes lesson plans for grades 5-8 and 9-12. Can be purchased alone or with *The Monitor's Handbook* and *The Water Quality Educator* CD.

Test Factor	Range (# Tests)	Kit Code	Shipping
pH†	pH 3.0-10.5 (100)	5858-01	R1
Nitrate-Nitrogen	0-15 ppm (50)	3354-01	NH
Phosphate	0-2.0 ppm (50)	3121-02	R1
Dissolved Oxygen	0-10.0 ppm (50)	5860-01	R1
Alkalinity, Total	0-200 ppm (50)	4491-DR-01	NH
Turbidity	0-200 JTU (50)	7519-01	NH
Temperature	–5° to 45°C	1066	NH
The Water Quality Educator CD ROM (not sold individually)			
The Monitor's Handbook see page 52			

Macintosh and QuickTime are registered trademarks of Apple Computer, Inc.

† ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

The Water Quality Educator CD (PC or MAC)

Teach your students and volunteer monitors all about natural water quality monitoring. Useful for designing a science project, community outreach program, environmental course, classroom and field activity. All three categories of water testing are included—chemical, microbiological and macroinvertebrate standard methods—safety, testing hints and interpreting results.

System requirments: Windows®: 64MB available RAM, Windows 98, 2000, XP or Vista. Macintosh®: 128 MB available RAM, OS X 10.1.5, 10.2.6 or 10.3. Not compatible with Windows 10.

The Monitor's Handbook

A Reference Guide for Natural Water Monitoring

Discusses reasons for monitoring, organizational planning, pre-monitoring activities, site selection, extensive descriptions of the physical, biological and chemical factors, equipment, quality data, analysis and presentation.

English, Spanish & French Instructions!

Code 5870-01

AP NGSS ALIGNED

AP® The Water Quality Assessment Package

Grades 7 and up

Order Code 5845-PKG† | R1 (16)

Combining the Water Quality Educator, (see page 12) and the AP® Environmental Science Water Quality Assessment Curriculum Module (above), the AP® Environmental Science WATER QUALITY ASSESSMENT PACKAGE bundles the curriculum above with the test kits to provide a complete package at a reduced price!

Code 5845-PKG

† ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

HEY! There's An App For That!

Includes a Free LaMotte BioPaddles® Colony ID™ Lite App which lets users compare their "unknown" microbe growth on the BioPaddle to a library of photos of "known" microbe colonies. See page 22.

AP NGSS ALIGNED

AP® Environmental Water Quality Assessment Curriculum Module

Use with the Water Quality Educator!

Grades 7 and up

Order Code 5845 | NH (2)

The AP® Environmental Science WATER QUALITY ASSESSMENT MODULE uses the collection and manipulation of data necessary to calculate the WQI as a tool to teach students key STEM-based skills. Instead of directly giving them a math, science, technology, or engineering lesson, it provides data from real life situations that is used in the first four guided activities to develop and learn to solve problems, think analytically and work independently. In the fifth field activity, students apply the skills that they have learned and, with their understanding of water quality and the WQI, collect data to evaluate a local waterway to satisfy Section VI (Water Pollution) of the AP® Environmental Topics Outline.
In four classroom activities, students use actual data from the Kansas River watershed to:

- analyze and interpret data
- create spreadsheets
- calculate the water quality index
- generate graphs
- perform statistical analysis
- communicate accurately
- access real-time hydrological data
- observe environmental systems

In a culminating field activity, students access internet sites to identify their local watershed, choose a sampling site on a local waterway, and utilize appropriate techniques to identify their watershed. The Water Quality Assessment Package provides support materials and monitoring equipment to perform chemical and biological analyses to determine the water quality index.

Code 5845

The following environmental concepts are covered: watersheds, Water Quality Index, physical, chemical and biological water quality parameters, nutrient loading, hydrological variables, watershed ecology, remediation measures, and point-non-point pollution sources. Includes:

- Nutrient – TTC/MacConkey BioPaddles (Code 5553) for coliform testing
- Salt/TDS/Temp Tracer (Code 1749) for temperature and TDS determination
- Teacher Resource CD (included with the Water Quality Index Module) contains:
  - Teacher/Student guide
  - water quality test procedures
  - STEM-based extension activities
  - PowerPoint presentations and Quick Time iPad/iPod videos
  - data spreadsheets
  - glossary
  - graphics files
  - chemical reactions

Code 5854-02

Shallow Water Outfit

Grades 5 and up

Order Code 5854-02† | R1 (9)
Reagent Refill R-5854-01† | R1 (2)

Too shallow for a Secchi Disk? Turbidity is easily measured using a standardized turbidity reagent to match the turbidity of a water sample. All the necessary apparatus and reagents needed to test four basic water quality test factors are included. Economical reagent refill packages are available.

Test Factor	Test Method	Range/Sensitivity
Temperature	Thermometer	–5° to 45° C/0.5 increments
pH †	Two Octa-Slide 2 Comparators	pH 3.0-10.5/0.5 increments
Turbidity	Drop Count	0-200 JTU/5 JTU increments
Dissolved Oxygen	Direct Reading Titrator	0-10 ppm O_2/0.2 ppm increments

† ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Code 5857-01

Tidal Water Outfit

Grades 5 and up

Order Code 5857-01† | R1 (10)
Reagent Refill R-5857-01† | R1 (3)

Compare specific gravity of varying concentrations of salt water to freshwater by using a hydrometer and a clear, acrylic hydrometer jar. Turbidity is measured by "Secchi depth," using a 20 cm diameter, black and white Secchi disk and calibrated line. All the necessary apparatus, reagents and detailed instructions to test 5 basic water quality test factors are included. All fit securely within a foam insert and are housed in a rugged field carrying case. Economical reagent refill package available.

Test Factor	Test Method	Range/Sensitivity
Dissolved Oxygen	Direct Reading Titrator	0-10 ppm O_2/0.2 ppm increments
Temperature	Thermometer	–5° to 45° C/0.5 increments
pH†	Two Octa-Slide 2 Comparators	pH 3.0-10.5/0.5 increments
Secchi depth	Secchi Disk	0-20m/0.5m increments
Salinity	Hydrometer	1.0000 to 1.0700 SG/0.0005 increments; 0.0 ppt to 43.6 ppt salinity/0.2 ppt increments

† ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Water Pollution 1

Grades 5 and up

Order Code 5917-03† | R1 (14)
Reagent Refill R-5917-03† | R1 (3)

Ideal for examining water quality in known or suspected polluted aquatic environments.

- individual test modules for 7 key test factors
- complete instructions
- reagents to perform 50 tests for each factor
- all necessary apparatus
- three handbooks: *A Study of Water Quality, Our Environment Battles Water Pollution,* and *Investigating Water Problems*
- Field-friendly tote with shoulder strap

Colorimetric Tests

Test Factor	Range (# Tests)	Kit Codes	Shipping
Chlorine	0.2-3.0 ppm (50)	3308-01	NH
pH †	3-10.5 (100)	5858-01	R1
Nitrate-Nitrogen †	0.2-1.0 ppm (40)	3119-01	R1
Phosphate †	0.2-1.0 ppm (50)	3119-01	R1
Ammonia-Nitrogen †	1.0-4.0 ppm (50)	5864-01	R1
Temperature	-5°C-45°C	1066	NH

Titration Tests

Test Factor	Range (# Tests)	Kit Codes	Shipping
Dissolved Oxygen	0-10.0 ppm (50)	5860-01	LQ

† ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Water Pollution 2

Grades 5 and up

Order Code 5919-02† | R1 (15)
Reagent Refill R-5919-02† | R1 (3)

For more detailed water testing, this kit is an ideal supplement to our Water Pollution 1 outfit.

- 5 key water quality test factors
- data sheets
- three handbooks: *A Study of Water Quality, Our Environment Battles Water Pollution* and *Investigating Water Problems*
- Field-friendly tote with shoulder strap

Colorimetric Tests

Test Factor	Range (# Tests)	Kit Codes	Shipping
Color, APHA	0-100 units (50)	3528-01	NH
Turbidity	0-200 JTU (50)	7519-01	NH

Titration Tests

Test Factor	Range (# Tests)	Kit Codes	Shipping
Alkalinity	0-200 ppm (50)	4491-DR-01	NH
Carbon Dioxide †	0-50 ppm (50)	7297-DR-01	R1
Chloride †	0-200 ppm (50)	4503-DR-01	R1
Hardness	0-200 ppm (50)	4482-DR-LT-01	R1

† ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Code 5917-03

Also See: Earth Force Low Cost Kit pg. 6 | Earth Force Low Cost Estuary Kit pg. 6 | Earth Force Standard Kit pg. 7 | Earth Force Watershed Field Trip pg. 7

Code 5849

AM-12 · The TesTabs® Water Investigation Kit

Grades 5 and up

Order Code 5849† | R1 (7)

- investigate water pollution using LaMotte's simple TesTabs® reagents.
- 12 individual test modules
- easy-to-read, diagrammed instructions
- color charts
- test factor flashcards
- all necessary apparatus
- TesTabs® to perform 100 tests
- *The Monitor's Handbook*

Test Factor	Code	Shipping
Alkalinity	5893	NH
Ammonia †	5894	R1
Chloride	5895	NH
Chlorine	5896	NH
Chromium	5897	NH
Copper	5898	NH
Dissolved Oxygen/BOD	5889	NH
Hardness	5899	NH
Iron	5900	NH
Nitrate	5891	NH
pH	5890	NH
Phosphate	5892	NH

† ⚠ **WARNING** Reproductive Harm - www.P65Warnings.ca.gov/product

Code 3604-01

Acid Rain Study Outfit

Grades 5 and up

Order Code 3604-01† | R1 (3)
Reagent Refills 2218-G† | R1 (1)

Collect precipitation and determine the pH levels of ponds, lakes and streams with this complete outfit—a valuable unit for any environmental science program.

- durable, tapered rain gauge
- easy-to-use pH test kit
- comprehensive study guide
- activity sheets
- 50 tests

† ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Code 4491-DR-01

Code 3308-01

Single Parameter Test Kits

Test Factor	Order Code	Test System	Range/Resolution	# of Tests [# Reagents]	Shipping	Reagent Refill
Alkalinity	5893	Total Alkalinity Add Tablet TesTabs®	1 tablet = 40 ppm	100 (1)	NH (1)	----
GLOBE AP	4491-DR-01	Total Alkalinity	Direct Reading Titrator 0–200 ppm/4 ppm as $CaCO_3$	50 at 200 ppm (2)	NH (1)	R-4491-DR
	4533-DR-01 †C	P & T Alkalinity Direct Reading Titrator	0–200 ppm/4 ppm as $CaCO_3$	50 at 200 ppm (3)	NH (1)	R-4533-DR
Ammonia-Nitrogen	3304-02	Salicylate Octa-Slide 2 Comparator	0.0, 0.05, 0.1, 0.25, 0.5, 1.0, 1.5, 2.0 ppm NH_3-N	50 (3)	LQ (1)	R-3304
	5864-01 †R	Salicylate Color Chart	0.0, 0.25, 0.50, 1.0, 2.0, 4.0 ppm NH_3-N	50 (2)	R1 (1)	R-5864
	5894 †R	Salicylate Color Chart	0, 1, 2, 4 ppm NH_3-N	100 (2)	R1 (1)	----
Bacteria, Coliform	4-3616	Total Coliform LaMotte Tablet	Presence/Absence Drinking Water	1 (1)	NH (1)	----
	4-3616-UV	Total Coliform & *E. coli* LaMotte Tablet	Presence/Absence Drinking Water	1 (1)	NH (1)	----
	5850	Total Coliform LaMotte Tablet	Presence/Absence Recreational Water	44 (1)	NH (1)	----
	5553	BioPaddles Nutrient TTC/ MacConkey Agar	*E. coli* & Coliforms	10 (1)	NH (1)	----
	3-0040***	Coliscan CSK10	0-300 CFU/100mL *E. coli* and coliforms	10 (1)	NH (2)	----
	3-0041***	Coliscan MF10	0-300 CFU/100mL *E. coli* and coliforms	20 (1)	NH (3)	3-0042
Calcium	3609-01	Direct Reading Titrator	0-200 ppm/4 ppm $CaCO_3$ 0-2580 ppm/51.6 ppm $CaCO_3$	50 (3)	R1 (1)	R-3609
Carbon Dioxide	7297-DR-01 †B	Direct Reading Titrator	0–50 ppm/1.0 ppm CO_2	50 at 50 ppm (2)	R1 (1)	R-7297-DR
Chlorine Free & Total	3308-01*	DPD Tablet Octa-Slide 2 Comparator	0.2, 0.4, 0.6, 0.8, 1.0, 1.5, 2.0, 3.0 ppm Cl	50 (2)	NH (1)	6905A-H & 6999A-H
	5896	DPD Tablet Color Chart	0, 1, 3, 5 ppm Cl	100 (1)	NH (1)	----
Chromium	5897	TesTabs® Color Chart	0, 0.2, 0.4, 0.6 ppm Chromium	100 (1)	NH (1)	----
Copper	6616-01 †B	LRC Comparator	0, 0.05, 0.10, 0.15, 0.20, 0.30, 0.40, 0.50 ppm Cu	50 (1)	NH (1)	6446-H
	5898	TesTabs® Color Chart	0, 1.5, 2, 4 ppm Cu	100 (1)	NH (1)	----

Shipping Codes: NH: Non-Hazardous - No Fees R1: Small Qty. Hazardous Materials - No Fees LQ: Hazardous Materials - Air Fees Only HF: Hazardous Materials - Air & Ground Fees
*(NPDWR) EPA Accepted †(NPDES) EPA Accepted ***Frozen products/dated goods. Please specify ship date.

† Prop 65: **C**: ⚠ **WARNING** Cancer - www.P65Warnings.ca.gov/product; **R**: ⚠ **WARNING** Reproductive Harm - www.P65Warnings.ca.gov/product; **B**: ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Single Parameter Test Kits

Test Factor	Order Code	Test System	Range/Resolution	# of Tests [# Reagents]	Shipping	Reagent Refill
Cyanide AP	7387-02	Octa-Slide 2 Comparator	0.0, 0.10, 0.15, 0.20, 0.25, 0.30, 0.35, 0.40 ppm Free CN^-	50 (5)	R1 (3)	R-7387-01
Detergents	4507-02 †B	Drop Count	1 drop = 1.0 ppm Detergent	60 at 5.0 ppm (3)	R1 (2)	R-4507-01
Hardness	4482-DR-LT-01	Total Hardness Direct Reading Titrator	0–200 ppm/4 ppm $CaCO_3$	50 at 200 ppm (3)	R1 (1)	R-4482-DR-LT
	4824-DR-LT-01	Calcium, Magnesium, & Total Hardness Direct Reading Titrator	0–200 ppm/4 ppm $CaCO_3$	50 at 200 ppm (5)	R1 (1)	R-4824-DR-LT
	5899	TesTabs® Add Tablet Color Chart	1 tablet = 40 or 100 ppm	100 (1)	NH (1)	----
Iron	4447-01	Total Iron Octa-Slide 2 Comparator	0.5, 1.0, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0 ppm Fe	90 (2)	R1 (1)	R-4447
	7787-01	Total Iron LRC Comparator	0.05, 0.10, 0.20, 0.30, 0.40, 0.60, 0.80, 1.0 ppm Fe	30 (2)	R1 (1)	R-7787
	3347-01 †C	Ferrous/Ferric Iron Octa-Slide 2 Comparator	0.5, 1.0, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0 ppm Fe	85 (3)	R1 (1)	R-3347
	5900	TesTabs® Color Chart	0, 1, 5, 10 ppm Fe	100 (1)	NH (1)	----
Lead	5-0140	Immuno Assay	Yes/No at 15 ppb level	10	NH (1)	----
Manganese	3588-02 †B	PAN Octa-Slide 2 Comparator	0.05, 0.1, 0.2, 0.4, 0.6, 0.8, 1.0 ppm Mn	50 (4)	HF (2)	R-3588-01
Nitrate Nitrogen	3519-01 (Includes Nitrite) †B	Cadmium Reduction Octa-Slide 2 Comparator	0.25, 0.5, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0 ppm NO_3-N	40 (3)	R1 (1)	R-3519
	3110-01 †B	Cadmium Reduction Octa-Slide 2 Comparator	0.25, 0.5, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0 ppm NO_3-N	40 (2)	R1 (1)	R-3110
GLOBE AP	3615-01 †B	Cadmium Reduction LRC Comparator	0, 0.2, 0.4, 0.6, 0.8, 1.0 NO_3^--N	40 (2)	R1 (2)	R-3615-01
	3354-01	Zinc Reduction Octa-Slide 2 Comparator	0, 1, 2, 4, 6, 8, 10, 15 ppm NO_3-N	50 (2)	NH (2)	R-3354
	5891	TesTabs®, Zinc reduction Color Chart	0, 5, 20, 40 ppm NO_3	100 (1)	NH (1)	----
Nitrate/ Phosphate GLOBE AP	3119-01 †B	Cadmium Reduction/ Ascorbic Acid LRC Compratator	0.2, 0.4, 0.6, 1.0 ppm NO_3-N 0.2, 0.4, 0.6, 1.0 ppm PO_4^{3-}	Nitrate: 40 (2) Phosphate: 50 (2)	LQ (2)	R-3119-01
Oxygen, Dissolved GLOBE AP	5860-01	Winkler All Liquid Reagents Direct Reading Titrator	0–10 ppm/0.2 ppm O_2	50 at 10 ppm (5)	R1 (2)	R-5860
	5889	TesTabs® Color Chart	0, 4, 8 ppm O_2	100 (1)	NH (1)	----
pH	2109-01	Bromthymol Blue Octa-Slide 2 Comparator	6.0, 6.2, 6.4, 6.6, 6.8, 7.0, 7.2, 7.4	50 (1)	NH (1)	2210-G
	2110-01	Phenol Red Octa-Slide 2 Comparator	6.8, 7.0, 7.2, 7.4, 7.6, 7.8, 8.0, 8.2	50 (1)	NH (1)	2211-G
	2111-01	Cresol Red Octa-Slide 2 Comparator	7.2, 7.4, 7.6, 7.8, 8.0, 8.2, 8.4, 8.6	50 (1)	NH (1)	2212-G
	2112-01	Thymol Blue Octa-Slide 2 Comparator	8.0, 8.2, 8.4, 8.6, 8.8, 9.0, 9.2, 9.4	50 (1)	NH (1)	2213-G
AP	5858-01 †R	Wide Range Octa-Slide 2 Comparator, 2 bars	3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, 6.5 7.0, 7.5, 8.0, 8.5, 9.0, 9.5, 10.0, 10.5	100 (1)	R1 (1)	(2 x) 2218-G
	3-2950	Wide Range Test Strips	4-indicators, 0-14 pH/1.0 pH	100 (1)	NH (1)	----
	5890	TesTabs® Color Chart	4, 5, 6, 7, 8, 9, 10, 11 pH	100 (1)	NH (1)	----
Phosphate/ Nitrate GLOBE AP	3119-01 †B	Ascorbic Acid/ Cadmium Reduction LRC Comparator	0.2, 0.4, 0.6, 1.0 ppm NO_3-N 0.2, 0.4, 0.6, 1.0 ppm PO_4^{3-}	Phosphate: 50 (2) Nitrate: 40 (2)	LQ (2)	R-3119
Phosphate GLOBE	3121-02	Ascorbic Acid LRC Comparator	0, 0.2, 0.4, 0.6, 0.8, 1.0, 1.5, 2.0 ppm PO_4^{3-}	50 (2)	R1 (1)	R-3121-01
	5892	TesTabs® Color Chart	0, 1, 2, 4 ppm PO_4^{3-}	100 (1)	NH (1)	----
AP	3021-G-ENV	Test Strips	0, 100, 200, 300, 500, 1,000, 2,500 ppb PO_4 0, 0.1, 0.2, 0.3, 0.5, 1.0, 2.5 ppm	25	N (1)	----

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*{NPDWR} EPA Accepted †{NPDES} EPA Accepted

† Prop 65: **C**: ⚠ **WARNING** Cancer - www.P65Warnings.ca.gov/product; **R**: ⚠ **WARNING** Reproductive Harm - www.P65Warnings.ca.gov/product; **B**: ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Single Parameter Test Kits

Test Factor	Order Code	Test System	Range/Resolution	# of Tests (# Reagents)	Shipping	Reagent Refill
Phosphate, Total	7884	Conversion kit, digestion, use with orthophosphate kit for total phosphate measurement, requires heat source (not included).		50 (5)	HF (2)	----
Salinity	3-0025	Hydrometer Kit	0–40 ppt Salinity	Unlimited	NH (4)	----
GLOBE AP	7459-02 †B	Direct Reading Titrator	0–40 ppt/0.4 ppt Salinity	50 at 20 ppt (2)	R1 (1)	R-7459-01
Sulfate	7778-01	Tablet Octa-Slide 2 Comparator	0, 20, 50, 80, 120, 160, 200 ppm SO_4^{2-}	50 (1)	R1 (1)	6456-H
Turbidity	7519-01	Drop Count	5–100 JTU/5 JTU, 10–200 JTU/10 JTU	50 at 10 or 20 JTU (1)	NH (1)	7520-H
	5887	Turbidimetric	0, 20, 40, 60, 80, 100 JTU	Unlimited	NH (1)	----
Zinc	7391-02 †C	Octa-Slide 2 Comparator	0, 1, 2, 3, 4, 6, 8, 10 ppm Zn	50 (2)	NH (1)	R-7391-01

Shipping Codes: NH: Non-Hazardous - No Fees R1: Small Qty. Hazardous Materials - No Fees LQ: Hazardous Materials - Air Fees Only HF: Hazardous Materials - Air & Ground Fees
*(NPDWR) EPA Accepted †(NPDES) EPA Accepted **Not for use in salt or brackish waters.

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Water Test Strips

Single Factor Test Strips

Test Factor	Code	Range (ppm)	Water Testing Application*	# of Tests Per Factor/Per Vial	Values (ppm)
Alkalinity	2997	0-180	Drinking, Food/ Beverage, Pool	50	0, 40, 80, 120, 180
Ammonia	3023-G	0-6	Natural Waters	25	0, 0.5, 1.0, 3.0, 60
Chlorine, Free & Total	3027-G	0-10.0	Drinking, Food/ Beverage, Pool	25	0, 0.25, 0.5, 1, 3, 10
Chlorine, Total	2979	0-5	Drinking, Food/Beverage	50	0, 0.5, 1, 3, 5
Hardness, Low Range	2981	0-180	Drinking, Food/Beverage	50	0, 30, 60, 120, 180
pH, Wide Range	2974	pH: 4-10	Drinking, Food/ Beverage, Pool	50	4, 5, 6, 7, 8, 9, 10
Phosphate, Low Range	3021-G-ENV	0-2,500 ppb 0-2.5 ppm	Natural Waters	25	0, 100, 200, 300, 500, 1,000, 2,500 ppb PO_4 0, 0.1, 0.2, 0.3, 0.5, 1.0, 2.5 ppm

Multi-Factor Test Strips

Test Factor	Code	Range (ppm)	Water Testing Application*	# of Tests Per Factor/Per Vial	Values (ppm)
5 Way for Natural Waters	3038-G	Nitrate: 0-200 Nitrite: 0-10.0 pH: 6.0-9.0 Alkalinity: 0-240 Hardness: 0-180	Natural Waters Aquariums	25	0, 20, 40, 80, 160, 200 0, 0.5, 1.0, 3.0, 5.0, 10.0 6.0, 6.5, 7.0, 7.5, 8.0, 8.5, 9.0 0, 40, 80, 120, 180, 240 0, 30, 60, 120, 180
6 Way for Drinking Water	2933-G	Free Chlorine: 0-10 Total Chlorine: 0-10 Total Hardness: 0-400 pH: 4-10 Nitrite-N: 0-10 Nitrate-N: 0-50	Drinking, Food/Beverage	25	0, 0.5, 1, 3, 5, 10 0, 0.5, 1, 3, 5, 10 0, 50, 100, 200, 400 4, 5, 6, 7, 8, 9, 10 0, 0.5, 1, 5, 10 0, 5, 10, 25, 50
Iron & Copper	2994	Iron: 0-5 Copper: 0-3	Drinking, Pool	25 25	0, 0.3, 0.5, 1, 3, 50, 0.3, 0.6, 1, 3
Iron, pH, Hardness & Chlorine	2992	Iron: 0-5 pH: 4-10 Hard: 0-400 Total Chlorine : 0-10	Drinking	25 25 25 25	0, 0.3, 0.5, 1, 3, 5 4, 5, 6, 7, 8, 9, 0, 100, 50, 100, 200, 400 0, 0.5, 1, 3, 5, 10
Wide Range (pH & Total Chlorine)	2987-G	pH: 4-10 TCl: 0-50	Drinking, Food/ Beverage, Pool	25 25	4, 5, 6, 7, 8, 9, 100, 1, 5, 10, 20, 50
Nitrate & Nitrite	2996	Nitrate: 0-50 Nitrite: 0-10	Drinking	50 50	0, 5, 10, 25, 50 [NO_3-N]0, 0.5, 1, 5, 10 [NO_2-N]

*Strips shown have been evaluated for use in these applications. Use in other applications is subject to potential interferences. Contact LaMotte Technical Services for more information.

BioPaddles®

Microbiology Simplified!

- ready to use—saves time!
- reduced cost and waste
- longer shelf-life than traditional treated Petri dishes
- no refrigeration required
- no need for inoculating loops or Bunsen burners
- simple incubation requirements
- unique design enhances colony morphology characterization

2 Tests Per Paddle!

BioPaddles are flexible, dual-agar paddles each side containing microbe-specific media enclosed in a sterile vial. Identify and quantify microbes in air, soil, water or any surface! BioPaddles do not require any other testing equipment—only a magnifier and warm place (or incubator) are needed.

Liquid Sampling: Remove the paddle from the vial and fill the vial (approximately 40 mL) with the sample. Insert the paddle, swirl for 15 seconds. Pour out the liquid and replace paddle in the vial and incubate.

Surface Sampling: Remove the paddle from the vial and gently touch each paddle media surface to the sample surface twice per side. Replace paddle in the vial and incubate.

Air Sampling: Remove the paddle from the vial. Invert and mount the circular cap into the vial, exposing the agar covered paddle. Expose for 15 minutes. Replace the paddle in the vial and incubate.

BioPaddles® products—all packaged 10 paddles per box. Includes general instructions and provides access to detailed technical documents for each paddle type.

BioPaddles

Code	Type of Agar	Description	Shipping
5550	BioPaddle Nutrient Agar	For routine culture of non-fastidious bacteria.	NH (1)
5551	BioPaddle Sabouraud Dextrose Agar	For selective cultivation of fungi (yeasts and molds)	NH (1)
5552	BioPaddle Tryptic Soy (TSA)/Rose Bengal (RB) Agars	For cultivation of a wide variety of microorganisms (TSA) and selective isolation of yeasts and molds (RB).	NH (1)
5553	BioPaddle Nutrient TTC/ MacConkey Agars	For field sampling cultivation and enumeration of coliform bacteria (TTC) and total coliform count (TCC). Gram (-) bacterial colonies appear as red dots. Gram (+) bacteria are usually inhibited. For improved differentiation between coliforms and non-lactose fermenting organisms (MAC). Gram (+) cocci are usually inhibited.	NH (1)

NOTE: Dated material. Specify ship date. Orders may be placed in advance. Orders shipped from Maryland on Monday and Tuesday only.

There's An App For That!

All BioPaddles® products include a free app! Free LaMotte BioPaddles® Colony ID™ Lite app for iPads lets users compare colony examples on BioPaddle agar types from 5 microhabitats (air, water, soil, surface and food). Also contains information regarding organisms, microbiological techniques, and more! See page 22.

New BioPaddles® Colony ID™ app for iPads has a library of over 250 images of 30+ microbes, ideal for presumptive identification. Images of microbial growth on BioPaddles® can be captured with the iPad camera and imported for a side-by-side comparison to the images in the reference library. Using the new Report function a report including a full color image can be prepared and distributed directly by email. Expanded resource materials include Fungi and Bacteria Microanatomy and Microbe Exclusionary Charts. Available for purchase through iTunes. Visit our web site at www.lamotte.com and click on BioPaddles for a direct link.

Code 5563

NGSS ALIGNED

Microbe Hunter™ Activities

Grades 6 and up

A fun and safe way to bring STEM-based learning into the classroom!

STEM-based activities guide students through the culturing and presumptive identification of common microbes on innovative BioPaddles®—each containing microbe-specific media enclosed in a sterile vial. Students apply science, technology, engineering, and math concepts to the exploration of microbes that they encounter every day. Activities develop critical thinking skills and emphasize engineering as a key component.

Each Microbe Hunter includes a CD, 10 BioPaddles to perform the first two activities, and 10 magnifying lenses. Additional paddles may be purchased to perform additional activities, STEM extention activities and Going Further activities.

- Culture bacteria without Petri dishes—no prep time
- Four to five inquiry-driven activities
- Student designed investigations of daily surroundings and natural environments
- Structured, guided, and open adaptable activities
- Introductory to advanced level activities
- Free microbe identification app from iTunes store
- Structured for classroom use
- Student Guide and Teacher Guide with examples and answers
- PowerPoint presentations for iPad, ID Guides, resources, links

REFILL: TSA/RB BioPaddles for all Microbe Hunter activities

Order Code 5552 | NH (1)

Probiotic Dairy Microbe Hunter

Order Code 5560 | NH (1)

Students identify and explore microbes cultured from popular dairy products like milk, yogurt, and Kefir. Teams design a monitoring method to determine when a dairy product is spoiled. Activities and topics include probiotics, fermentation, pasteurization, and shelf life. STEM extension activities include demonstrating the correlation between pH and milk curdling.

Surface Microbe Hunter

Order Code 5561 | NH (1)

Students discover factors that influence the growth and removal of surface microbes, design and evaluate cleaning protocols, and compare the effectiveness of antimicrobial materials. Activities and topics include surface characteristics, microbial diversity, biofilms, surface microbe identification, sanitizers and disinfectants. STEM extension activities ask *How Clean Are Kitchen Sponges?* And use popular mousepads to answer *Do Antimicrobials Keep Products Cleaner?*

Air Microbe Hunter

Order Code 5562 | NH (1)

Students predict which environmental conditions are favorable to airborne microbes and then propose and carry out a strategy to collect airborne microbes using passive sampling techniques. Students construct and calibrate an impact sampler to sample an airspace and determine airborne microbe contaminate levels. Activities and topics include the presumptive identification of airborne microbes, bioaerosols, cloud chemistry and precipitation, bacterial ice nucleators, and airborne diseases. STEM extension activities include *How Did Fungus Get Into King Tut's Tomb?* and *Dust and Dust Bunnies*.

Soil Microbe Hunter

Order Code 5563 | NH (1)

Students research the process of soil formation, soil characteristics, and the influence of environmental conditions on soil microbe populations. Students assess and sample various soil ecosystems using the surface contact impression technique, dilution technique, root wash technique, and the Rossi-Cholodny buried slide contact transfer technique. Microbes are identified and enumerated to calculate microbial diversity. Activities and topics include the effect of fertilizer on lawn microbe populations, rhizosphere ecosystems, biological soil crusts, and biopesticides. STEM extension activities include *Is There Such a Thing as Sterile Soil?*, *Investigating Soil Inoculants* and *Soil Crust Hunt*.

Food Microbe Hunter

Order Code 5565 | NH (1)

Students determine what factors affect microbe growth in food by designing experiments to control intrinsic and extrinsic factors, predict the probability of microbe growth on foods, and design an experiment to prove their hypothesis about the preservative effects of pickling. Activities and topics include identification of microbes in and on food, food spoilage, moisture equilibrium, water activity, nutrients, and food as an ecosystem. STEM extension activities include evaluating the effectiveness of garlic as an antimicrobial agent and the demonstration of Koch's Postulate.

Also See: Total Coliform kits pg. 17

Code 5846

BioPaddles®
Total Coliform Activity

Grades 9 and up

Order Code 5846 | NH (2)

Fast and reliable cultivation and enumeration of coliform bacteria. Includes 5553/Nutrient TTC/MacConkey BioPaddles (10 paddles) (page 22). Activity also includes a Teacher Resource CD with a complete coliform test activity, Teacher and Student Guides, PowerPoint and iPad/iPod formatted material that provides helpful background information on coliforms, field testing, Fecal Coliform Count, Total Viable Count (TVC) and Total Coliform Count (TCC) enumeration. Can be used as a demonstration or a classroom activity. Additional BioPaddles are available. Also includes a **Free LaMotte BioPaddles® Colony ID™ Lite** app.

Refill Paddles

BioPaddles Nutrient TTC/Maconkey Agar

Order Code 5553 | NH (1)

BioPaddles® Colony ID™ Apps

BioPaddles® Colony ID™ Lite App

All BioPaddles products include a free app! The FREE BioPaddles® Colony ID™ Lite app for iPads lets users enumerate and presumptively identify colony growth by comparison to full color images. Lab procedures, identification guides and microbe fact sheets are included. Coming soon, a camera function in the BioPaddles® Colony ID™ app will capture microbe images for a side-by-side comparison to the library of images and inclusion in an emailable report.

BioPaddles® Colony ID™ App

The BioPaddles® Colony ID™ app for iPads expedites the presumptive identification of microbe growth on BioPaddles with a large library of over 250 full-color images of 35 microbes and microbe growth examples in five microhabitats. Use the iPad camera function to capture an image of the growth on your paddle and add it to the library for a side-by-side comparison. Resource materials—including microbe fact sheets, identification guides, and physical characteristics charts—provide a foundation for the determination. Once the microbes have been identified, a report containing the paddle image and pertinent information can be emailed directly from the app. For more information go to the App Store.

There's An App For That!

Available on the App Store

itunes.apple.com/us/app/id567584998

Compare your sample to a library of standards

Take a photo of your sample to compare to the standards

Write a report on your findings and email to others

Also See: Total Coliform kits pg. 17 | BioPaddles® Total Coliform Activity pg. 22

Micro Testing Without a Macro Investment!

Count the *E. coli* and coliforms in your favorite swimming hole. Use for ponds, streams, rivers, lakes, ocean water, tap water.

- patented combination of color-producing nutrients and enzymes that mark *E. coli* purple-blue, coliforms pink, and other non-coliform bacteria colorless
- easy method of teaching and conducting microbiology testing
- eliminates need for autoclave, water bath, and balance
- saves preparation time
- all materials supplied except water sample
- science activities available
- adds valuable quantitative capability
- EPA approved for outdoor surface water monitoring (Coliscan CSK10) and potable water (Coliscan MF10)

Code 3-0040

Coliscan CSK10*

Grades 7 and up

Order Code 3-0040 | NH (2)

Ideal for sample sizes of 1-5 mL of river water or other samples with many coliforms or *E. coli* expected. The sample is collected with a sterile bottle, added directly into a bottle of Coliscan® Easygel®, and poured into a pretreated Petri dish. Under warm conditions (32-37°C) results can be ready in 24 hours. 10 tests. Color chart included.

*Frozen products/dated goods. Please specify ship date.

AP

Coliscan MF10*

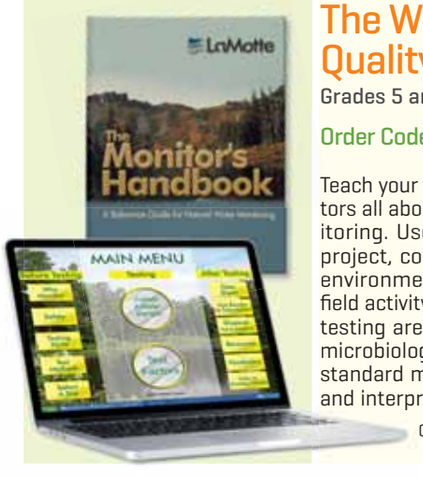
Grades 7 and up

Order Code 3-0041 | NH (3)
Refill Order Code 3-0042 | NH (3)

Ideal for large quantities of potable water or treated wastewater that contains a low level of coliforms or *E. coli*. Up to 100 mL of water is filtered through a membrane filter and placed on a Coliscan-MF nutrient rich pad in a Petri dish. 10 tests. Refill package contains enough materials to do 10 tests (refill does not include membrane filtration apparatus). Color chart included.

*Frozen products/dated goods. Please specify ship date.

Code 3-0041



The Water Quality Educator

Grades 5 and up

Order Code 5872 | NH (1)

Teach your students and volunteer monitors all about Natural Water Quality Monitoring. Useful for designing a science project, community outreach program, environmental course, classroom and field activity. All three categories of water testing are included, such as, chemical, microbiological, and macroinvertebrate standard methods, safety, testing hints, and interpreting results.

Code 5872

MacroLens™

Grades 1 and up

Order Code 5508 | NH (1)
10 pack
Order Code 5508-10 | NH (6)

MacroLens with 4.5X magnification covers the entire petri dish!
4" diameter.

Code 5508

Code 1097

Bottom Sampling Dredge

Order Code 1097 | NH (5)

Need a river bottom sample? Collect it easily!

- stainless steel
- trigger holds the sampler open while lowering
- scissor design closes sampler securely
- 67 cubic inches volume
- designed for soft bottoms (sand or silt)

Calibrated line only

Order Code 1064-G | NH (1)

20 meter line with brass clamp and foam float. 1 meter permanent markings in red and 5 meter markings in yellow.

NEW!

Code 1087

Horizontal Water Sampler

Grades 5 and up

Order Code 1087 | NH (5)

Collect water samples quickly and easily! This newly designed horizontal water sampler allows water to be sampled at specific depths. A 20 meter calibrated line, marked at one meter intervals, is included. The clear acrylic tube allows a visual inspection of the sample prior to dispensing and holds approximately 1,200 mL of sample.

Send the weighted messenger down the line to trip the closing mechanism at the desired depth. Open one chamber end cap to dispense larger aliquots.

Code 1069-01

AP

Sampling & Measurement Outfit

Grades 5 and up

Order Code 1069-01 | NH (17)

A necessity for any field sampling effort. Durable, reliable sampling gear and measuring devices are housed within a rugged field carrying case for convenient transport and storage.

Outfit Includes

Description	Code
Stainless Steel Bottom Sampling Dredge	1097
Plankton Net	1063
Sounding Weight and Calibrated Line	1064-G
Armored Thermometer	1066
Water Sampling Bottle	1054-DO
Forel-Ule Color Comparator	-----
Secchi Disk	0171

Dissolved Oxygen Sampler

Order Code 1054-DO | NH (3)

Includes the sample bottle used in our popular Dissolved Oxygen Kits. See page 25.

Code 1054-DO

Dissolved Oxygen/ Temperature Sampler

Order Code 3-0026 | NH (5)

Ideal for collecting dissolved oxygen samples at specific depths.

- bottle fills, overflows and flushes more than 3 times to insure a representative sample
- decreasing water pressure prevents exchange of air and water with sample
- interior chamber accommodates our armored thermometer.(not included, see page 26) uses the same sample bottle in our popular DO kits. Use with calibrated line and sounding weight (not included, see below)

Sounding weight (2 lb) and calibrated line unit

Order Code 1064-G | NH (4)

Sounding weight (2 lb) only

Order Code 1068 | NH (3)

Code 3-0026

Plankton Net

15" (38.1cm) tall, 5" (12.7cm) dia. mouth

Order Code 1063 | NH (2)

Collect minute plankton quickly and easily!

- 10 mesh, 153 micron nylon cloth
- clear, conical tube attached at end of the net allows plankton viewing; includes 2 tubes
- net mouth braced by sturdy stainless steel ring and harness

Code 1063

AP GLOBE

Deluxe Secchi Disks

Black and white Secchi (disk only)

Order Code 0171 | NH (3)

Disk w/ black and white quadrants & calibrated line

Order Code 0171-CL | NH (7)

Determine turbidity or degree of visibility in natural waters with this weighted 20 cm diameter disk.

- braided line
- permanent black markings every half-meter up to 20 meters that won't bleed or fade. Red markings at one meter intervals and yellow marking at 5 meter intervals

Code 0171-CL


Code 3-0025

GLOBE

Hydrometer

Order Code 3-0011 | NH (1)

Precision specific gravity hydrometer for salinity measurement. Use with Hydrometer Jar and Armored Thermometer.

- graduated glass scale in divisions of 0.0005 from 1.0000 to 1.0700 Specific Gravity (SG)
- measures salinity from 0.0 to 43.6 ppt
- each unit checked against NIST certified standard
- supplied in a plastic tube
- table to convert reading to salinity in parts per thousand (ppt)
- 330 mm (13"), scale length is 140 mm (5.5"). Use with Hydrometer Jar (Code 3-0024) and Armored Thermometer (Code 1066)

Hydrometer Jar

Order Code 3-0024 | NH (3)

Clear, durable (PMP) cylinder is never slippery—even when wet.

- molded, clear plastic 500 mL cylinder
- broad base for excellent stability

Hydrometer Kit

Order Code 3-0025 | NH (4)

Includes both hydrometer (3-0011) and jar (3-0024).

⚠ WARNING: Contains lead weights. Weights should not be handled by children under 14. Adult supervision recommended.


Code 1066

Armored Thermometer

Order Code 1066 | NH (1)

A precision, NON-MERCURY thermometer encased in protective plastic jacket.

- window opening
- engraved graduation on white tubing increases readability
- full range of –5° to 50°C in 0.5° increments

Precision Rain Gauge

Order Code 1048 | NH (1)

- wedge-shaped rain gauge is easy-to-read!
- large 2.5" x 2.3" opening
- precision-molded graduations
- measures 0.5 mm to 150 mm (or 0.01" to 6")
- fasteners are included for post or fence mounting


Code 1048

Tapered Rain Gauge

Order Code 1047 | NH (1)

10" long, durable clear rain gauge.

- tapered to fit a 6" white plastic ground stake (included), for convenient placement and use
- 31mm diameter collection opening
- includes fasteners for post or fence mounting
- measures rainfall of 1.0 mm to 140 mm or 0.1" to 5.5"


Code 1047

Code 0172

Student Grade Kick Net

Order Code 0172 | NH (4)

This sturdy mesh net is ideal for student macroinvertebrate collection. Durable mesh net measures approximately 35" x 45". Mesh size 1/32". Three-inch pockets on opposite sides hold poles in place. Poles not supplied with unit but can be purchased at any local hardware store.

GLOBE

Kick-Net

Kick-Net with poles

Order Code 0021-P
NH (8)

Kick-Net Only

Order Code 0021
NH (4)

Performing USEPA Rapid Bioassessment Protocols for benthic macroinvertebrates? You'll need this net!

- 1 x 1 meter square, 500 micron, white net
- hemmed sides hold poles, reinforced bottom seam helps anchoring
- galvanized chain recommended, not included. Specs provided in instructions for purchase locally

Code 0021

Code 0021-P

GLOBE

D-Net with Expandable Pole

Order Code 0168 | NH (7)

Replacement Bag

Order Code 0167B | NH (1)

Twelve-inch rim dip net is fitted with a heavy canvas bag approximately 6.5" deep. Bag attached to metal frame with clamp rings. Bottom of bag is a mesh material of approximately 500 micron nylon. Canvas skirt extends three inches below bag bottom to protect mesh. Aluminum pole extends from 52" to 84". Replacement bags available.

Code 0168

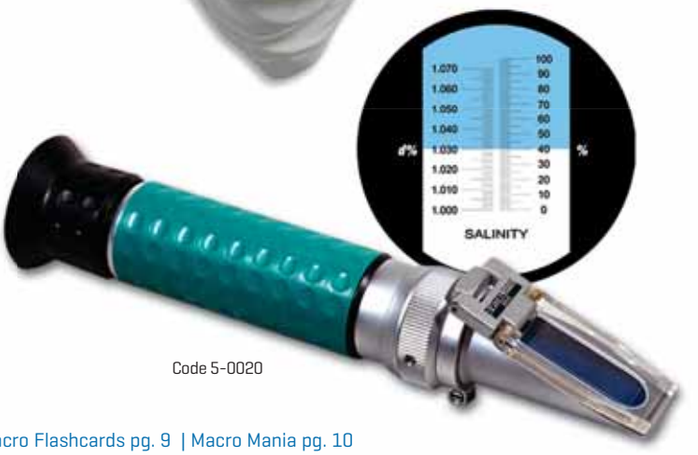
GLOBE

Salinity Refractometer

Order Code 5-0020 | NH (2)

- hand-held and easy-to-read!
- specific gravity (SG) and salinity (0/00) scales
- fully automatic temperature compensation over the range of 10° to 30°C
- rapid, accurate determinations require only a drop of sample

Scales:	Specific Gravity, 1.000 to 1.070 Salinity ppt (0/00), 0 to 100 ppt
Resolution:	Specific Gravity to 0.001 Salinity ppt (0/00) to 1 ppt



Code 5-0020

Also See: Wet Your Waders pg. 7 | Leaf Pack Kit pg. 8 | Bug Kit pg. 9 | Macro Flashcards pg. 9 | Macro Mania pg. 10

NEW!

Perfect for tablets and computers!

What's coming out of your tap?

The newly updated electronic version of our ever popular Tapwater Tour® is a classroom investigation of how and why the characteristics of tap water can vary and affect every day activities. After reviewing background material about pH, chlorine, hardness, copper, and iron, students work independently and in teams to test their own tap water samples with simple TestTabs® reagent tablets. Students use observations and analyze shared data from the hands-on activities to explore water quality.

Activities can be modified to fit specific curriculum needs or learning opportunities. Data sheets and puzzles for each unit can be printed or filled electronically by students using a computer or tablet. Includes Instructor Manual, Student Manual with data sheets and puzzles, classroom color chart, and reagents and sample test bags for 50 students.

NGSS ALIGNED

The Tapwater Tour®

Grades 4-8/50 students

Order Code 5972 | NH (1)
Reagent Refill R-3608 | NH (1)

- Instructor Manual with everything you need from background information and setting up the classroom to a shopping list for everyday items
- Student Manual including test procedure, data sheets, and puzzles
- Students work in groups and individually
- Encourages critical thinking and active learning
- Flipped learning: Students can read background material before the lesson and apply knowledge to analyze their own classroom data
- Works on computer or tablet
- Great for inclusion classrooms

Code 5972

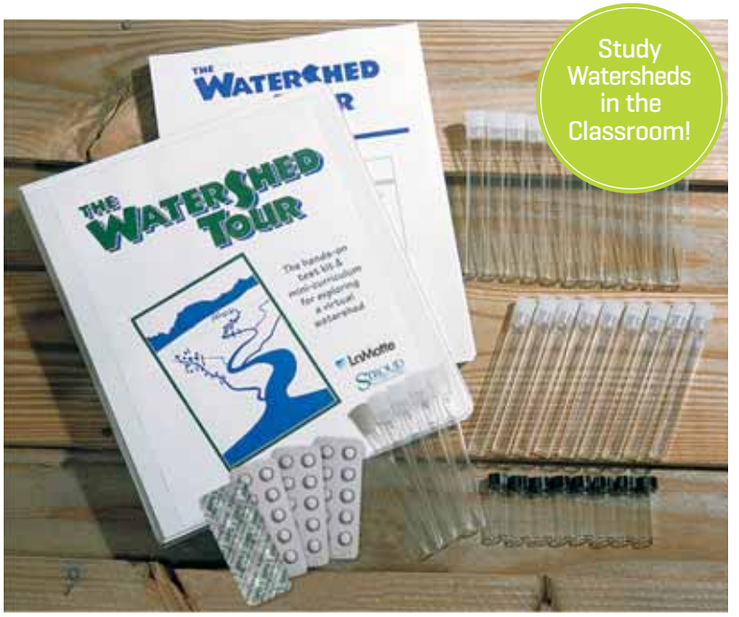
The Watershed Tour™

Grades 4-8/30 students

Order Code 5419 | NH (4)
Reagent Refill R-5419 | NH (1)

Can't get your class to a river? Need a meaningful watershed experience? Study a virtual watershed! Through a week-long series of activities students "test" four sites along a river continuum—from the headwaters to the mouth—to study how the river changes, and how human activities influence water quality. Introduce students to stream and river ecosystems through a classroom-based tour of a virtual watershed. The class will learn about stream ecology, water quality issues and their own connection to a watershed using TesTabs® tablet tests, games and activities. Incorporates science and math and geography activities. Includes lecture materials, illustrated handouts, teacher's tips, test procedures, TesTabs® reagents, data sheets and games. TesTabs® reagents and test tubes for 30 students in groups.

Also See: Test Strips pg. 19 | Funky Faucet pg. 32



Code 5419

The Shore Tour

Living Responsibly on the Edge of the Ocean

Grades 4-8/40 students

Order Code 5939 | NH (5)
Refill R-5939 | NH (1)

Five units teach students, through classroom lectures and activities, how their everyday actions affect the ocean. Whether they live in an urban, rural or a shore setting, students and their families can do things to help keep ocean and shore ecosystems healthy. Topics include an introduction to coastal ecosystems, energy conservation, pollution, estuaries, beach erosion and restoration, litter, recycling, oil spills, shoreline development and marine debris. Each unit is packed with activities and spotlights a traditional or not so traditional marine career. Real news stories and articles bring the lecture material to life. Includes data sheets and a thought-provoking game to bring it all together at the conclusion of the tour. Help students develop a sense of stewardship toward shores and oceans that will remain with them for the rest of their lives.

- informative lecture material with real life stories
- teacher tested activities from EPA, NOAA and The Marine Mammal Center
- CD with printable handouts, data sheets, and more
- links to activities and information from ocean experts
- complete hands-on curriculum
- spotlights of traditional and non-traditional marine careers
- step-by-step classroom activities, team data sheets and handouts
- incorporates science, math, language arts and social studies
- extensions and "Webquests" for each unit
- links to over 100 ocean-related resources

The Tour Series

Each inquiry-based Tour includes hands-on activities, background information, data sheets, classroom color chart posters, puzzles, diagrammed test procedures, and TesTabs tablet reagents. Flexible activities can be modified to mesh with current curriculums or to meet the needs of special populations.

Also See:
Marine Science Outfit pg. 11
Salinity Refractomer pg. 27
Hydrometer pg. 26

Code 5939

WARNING: This product is not a toy or game, but does contain small parts/pieces that could become a choking hazard.

Also See: NPK Soil Kit pg. 45 | Nitty Gritty Soil Kit pg. 31 | Soil pH Kit pg. 45 | Soil Sampler pg. 47 | Funky Faucet pg. 31

Code 5418

The Pondwater Tour

Grades 4-8/50 students

Order Code 5418† | NH (4)
Reagent Refill R-5418† | NH (1)

Study and measure changes in water quality in any body of water—from lakes to aquariums! The Pondwater Tour is a great classroom introduction into the study and measurement of changes in the water quality of a lake, stream, pond, aquarium or even a fish bowl. Each student on the Pondwater Tour conducts water quality tests for pH, dissolved oxygen, nitrate and ammonia using simple TesTabs® reagent tablets. Students investigate natural processes and variables that create changes in water quality over time. Incorporates science and math activities. Tablets and sample test bags for 50 students.

† ⚠ **WARNING** Reproductive Harm - www.P65Warnings.ca.gov/product

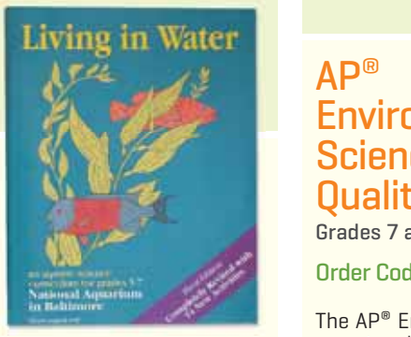
Code 5425-01

The Topsoil Tour

Grades 4-8/50 students

Order Code 5425-01 | NH (4)
Reagent Refill R-5425-01 | NH (1)

Get the dirt on your dirt! The Topsoil Tour is an exciting classroom investigation into the physical and chemical properties of soil. Each student on the Topsoil Tour completes seven units while conducting his/her own soil tests for soil texture, pH, nitrogen, phosphorus and potassium using simple TesTabs® reagent tablets. Incorporates math and science activities. Tablets and sample test bags for 50 students.



Code 1598

Living in Water

Department of Education at the National Aquarium in Baltimore

Order Code 1598 | NH (1)

An aquatic science textbook containing 50 activities that integrate physical, earth and life science. It can be used as a complete curriculum or individual activities. Classroom based scientific studies of water, aquatic environments and the plants and animals that live in water. Field studies can be adapted for use in any body of water form the ocean to a fish bowl. 395 pages.

Code 5845

AP® Environmental Science Water Quality Assessment Curriculum Module

Grades 7 and up

Order Code 5845 | NH (1)

The AP® Environmental Science WATER QUALITY ASSESSMENT MODULE includes and an extensive curriculum that uses the exploration of the Water Quality Index to teach students STEM-based skills that they will apply through classroom and field activities to satisfy Section VI (Water Pollution) of the **AP® Environmental Topics** Outline. Includes 10 Nutrient – TTC/MacConkey BioPaddles® (Code 5553) for coliform testing, Salt/TDS/Temp Tracer (Code 1749-01) for temperature and TDS determination and Teacher Resource CD-ROM. Module is designed to be used with the Water Quality Educator (Code 5870-01, see page 12)

Teacher Resource contains: Teacher/Student Guides, water quality field procedures, STEM-based activities, PowerPoint presentations, Quick Time iPad/iPod videos for Watershed Ecology, WQI, Water Pollution and Statistical Analysis. Also includes a **Free** LaMotte BioPaddles® Colony ID™ Lite app. See page 22.

† Prop 65: **C**: ⚠ **WARNING** Cancer - www.P65Warnings.ca.gov/product; **R**: ⚠ **WARNING** Reproductive Harm - www.P65Warnings.ca.gov/product; **B**: ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Also See: Wet Your Waders pg. 7 | Tapwater Tour pg.28 | Living in Water pg. 49

Earth Force Low Cost Water Monitoring Kit

Grades 3 and up

Order Code 3-5886 | NH (1)

Need to test fresh, brackish or saline water? Designed as a sampler that is a great introduction to any water quality monitoring program. This kit provides hands-on methods using TesTabs®. For long term monitoring, consider the Earth Force Standard Water Monitoring kit, code 5848, see page 7. Both kits are ideal for citizen monitoring, too.

- 8 different test factors: pH, dissolved oxygen, biochemical oxygen demand, temperature, turbidity, nitrate, phosphate and coliform bacteria
- manual with step-by-step diagrammed instructions in both English and Spanish
- all necessary apparatus
- TesTabs® to test 10 water samples (3 for coliform)
- laminated color chart

English, Spanish & French Instructions!

Code 3-5886

Nitty-Gritty Soil Science

Grades 3 and up

Order Code 5913 | NH (1)

Make friends with earthworms, and discover the importance of composting. This kit is a great introduction to the basic concepts of soil science! Investigate healthy plant requirements for proper soil texture, ideal levels of soil pH and nutrients. Learn to perform pH, nitrate, phosphate and potassium soil tests (using TesTab tablet methods). Reagents for 10 tests of each test factor are included.

Code 5913

Funky Faucet Sink Science

Grades 3 and up

Order Code 5914 | NH (1)

What's coming out of your funky faucet? Test tap water for pH, chlorine, hardness, copper and iron. Learn while you laugh with Just for Fun activities including make your own lava lamp and edible experiments like the Pollution Parfait.

- TesTabs reagents to run 10 tests each
- instructions for 5 simple water quality tests
- test tubes
- word search games
- internet resources

Code 5914

Also See: Wet Your Waders pg. 7 | Tapwater Tour pg. 28 | Funky Faucet pg. 31

GLOBE

NPK Soil Test Kit

Grades 5 and up

Order Code 3-5880 | NH (1)

English, Spanish & French Instructions!

Specifically designed to meet the needs of the GLOBE Program™, this kit is safe, fun and can easily ship anywhere!

- 50 tests each for nitrogen, phosphorus and potassium
- simple, diagrammed instructions
- all necessary apparatus
- laminated color chart
- uses TesTabs®

Code 3-5880

English, Spanish & French Instructions!

Soil pH Test Kit

Grades 5 and up

Order Code 5912 | NH (1)

By popular demand, TesTabs® method. Companion to NPK Soil Kit (Code 3-5880). Simple diagrammed instructions.

- 50 tests for pH
- Wide range 4-11 in 1.0 pH units
- Distilled or deionized water recommended

Code 5912

Aquatic Bug Kit

Grades 3 and up

Order Code 5950 | NH (1)

A creepy-crawly, wet investigation into the health of any freshwater environment. Following the easy-to-read manual, one to two students collect, observe, sort and identify aquatic insects as a guide for establishing water quality. Students complete the activity at home or spend an afternoon outdoors beside a stream or pond.

- mesh leaf bags for collection
- plastic dishes for sorting
- magnifying lens
- BUGGUIDE—a bug-by-bug description
- BUGBOARD identification chart
- manual, including activities, games and web links

Code 5950

Also See: pH 6 pg. 35 | pH PLUS Direct 2 pg. 35 | DO 6 PLUS pg. 36 | CON 6 PLUS pg. 36

Water Resistant!

English & French Instructions!

GLOBE

pH/Conductivity TRACER

Order Code 1766 | NH (1)

pH/Conductivity Sensor only

Order Code 1755 | NH (1)

- measure 5 parameters including Conductivity, TDS, Salinity, pH and Temperature using one electrode
- units of measure: pH, µS, mS, ppm, mg/L, g/L, °C, °F
- memory stores up to 25 labeled readings
- auto power off and low battery indicator

Decription	Range	Resolution	Accuracy
Conductivity	0 to 199.9 µS, 200 to 1999 µS, 2.00 to 19.99 mS	0.1 µS	±1%
TDS/Salinity	0 to 99.9 ppm (mg/L), 100 to 999 ppm (mg/L), 1.00 to 9.99 ppt (g/L)	0.1 ppm (mg/L)	±2%
pH	0.00 to 14.0 pH	0.01 pH	±0.01%
Temperature	32° to 149°F (0° to 65°C)	0.1°F/C	±1.8°F/°C

Code 1766: Use separate pH & Conductivity/TDS meters if sample conductivity is less than 200 µs. High conductivity readings may result using a combined pH/conductivity/TDS meter in low conductivity samples. Separate meters are available.

More on Page 34

pH TRACER

Order Code 1741 | NH (1)

English & French Instructions!

- read pH from 0.00-14.00 pH to 0.01 pH resolution
- supplied with 4, 7, 10 pH buffer tablets
- automatic self calibration to 1, 2 or 3 points
- extra bold display includes analog bar graph feature
- memory can store up to 15 readings
- chlorine and pH modes display sample temperature
- unit identifies which probe is in use and retains calibrations
- automatic shut-off and low battery indicator; uses four LR-44 batteries
- optional total chlorine probe (1732) makes unit a true ISE; TCL tablets (7044A) required

pH TRACER Accessories

Code	Description
1733	pH Probe; Range: 0-14.00/±0.01 pH
1734	ORP probe; Range: ±999mV/±4mV
1732	Cl_2 probe; Range: 0-10.00/±10% of reading
7044A-J	TCL tablets, 100 pack

EC/TDS/Salt TRACER

Order Code 1749 | NH (1)

English & French Instructions!

Salt/TDS/Temp Sensor only

Order Code 1765 | NH (1)

- easy to use, water resistant design
- 1-2% accuracy for EC, TDS and salt modules
- automatic temperature compensation
- memory can store up to 15 readings
- auto shut off and low battery indicator
- uses four SR-44W batteries

Description	Range	Resolution	Accuracy
Conductivity	0 to 199.9 µS, 200 to 1999 µS, 2.00 to 19.99 mS	0.1 µS	±1%
TDS/Salinity	0 to 9,999 ppm (mg/L)	0.1 ppm (mg/L)	±2%
Temperature	32° to 149°F (0 to 65°C)	0.1°F/°C	±1.8°F/°C

EC/TDS/Salt TRACER Accessories

Conductivity Standard, 1413 µS, 500 mL	Order Code 6354-L	NH (1)
Conductivity Standard, 12,880 µS, 500 mL	Order Code 6317-L	NH (1)

Dissolved Oxygen TRACER

Order Code 1761 | NH (1)

DO Sensor Module

Order Code 1762 | NH (1)

- oxygen level displayed as % Saturation from 0 to 200.0% or Concentration from 0 to 20.00 ppm (mg/L)
- adjustable Altitude Compensation (0-20,000 ft in 1,000 ft increments)
- adjustable Salinity Compensation from 0 to 50 ppt
- memory stores up to 25 data sets with DO and Temperature reading
- self-calibration on power up; data hold, auto power off, Low battery indicator
- optional 3 ft (1m) or 16 ft (5m) extension cable
- complete with DO electrode, protective sensor cap, spare membrane cap, electrolyte, four 1.5V SR44W batteries and 48" (1.2m) neckstrap

Description	Range	Resolution	Accuracy
DO (sat. mode)	0 to 200.0%	0.1%	±2% FS
DO (conc. mode)	0 to 20.00 ppm (mg/L)	0.01 ppm (mg/L)	0.4 ppm (mg/L)
Temp.	32 to 122°F (0 to 50°C)	0.1°F/°C	±1.8°F (1°C)

Optional TRACER Accessories

Description	Order Code	Shipping
DO Membrane Kit (6 screw-on membranes and solution)	Order Code 1761M	NH (1)
Weighted Stand w/Sample Cups (5)	Order Code 1746	NH (1)
Sample Cups w/caps (24)	Order Code 1745	NH (1)
DO Extension Cable (1 meters)	Order Code 1763	NH (1)
DO Extension Cable (5 meters)	Order Code 1764	NH (1)

Standardized pH Buffer Solutions

For use in calibration of pH meters. Available in 120 mL (-J) and 500 mL (-L) sizes.

pH Value	Order Code
4.00	2866
7.00	2881
10.00	2896

Conductivity/TDS Solutions

Value	Order Code
74 µmohs/cm, 52 ppm	6416-L
718 µmohs/cm, 503 ppm	6417-L
1,413 µmohs/cm,989 ppm	6354-L

1 µmohs = µS

2020i Portable Turbidity Meter

Order Code 1974-I | NH (6)

New RATIOMETRIC design in one of the most innovative, **WATERPROOF**, handheld meters available on the market! Perfect for field and laboratory applications, this compact and easy-to-use instrument is an exceptional value.

- Advanced calibration algorithms
- Easy menu driven operation and large LCD display
- 500 point data log

Code 1974-I

English, Spanish & French Instructions!

Mode	Nephelometric	Ratiometric	Attenuation
Unit of Measure 2020i	NTU, FNRU, ASBC, EBC	NTU, FNU, ASBC, EBC	NTU, FAU, ASBC, EBC
Range	0-100 NTU/FNU 0-1,750 ASBC 0-25 EBC	0-1,000 NTRU/FNRU 0-17,500 ASBC 0-250 EBC	0-2,000 AU/FAU 0-70,000 ASBC, 0-1,000 EBC
Resolution	0–10.99 NTU/FNU: 0.01 11.0–100.0 NTU/ FNU: 0.1	0–10.99 NTRU/FNRU: 0.01 11.0–109.9 NTRU/FNRU: 0.1 110–1000 NTRU/FNRU: 1	0–2000 AU/ FAU: 1
Accuracy	0-2.5 NTU/FNU: ±0.05 2.5-100 NTU/FNU: ±2%	0-2.5 NTRU/FNRU: ±0.05 2.5-100 NTRU/FNRU: ±2% 100-1000 NTRU/FNRU: ±3%	0-2000 AU/FAU: ±10 AU/FAU or 6%, whichever is greater
Detection Limit	0.05 NTU/FNU	0.05 NTRU/FNRU	10 AU/FAU
Reproducibility	0.02 NTU/FNU or 1%	0.02 NTRU/FNRU or 1%	1%
Range Selection	Automatic		
Light Source	2020t: Tungsten lamp 2300 °K ±50 °K		
Detector	2020t: Photodiode, centered at 90° and 180°, maximum peak 400-600 nm		
Signal Averaging	Disabled, 2, 5, 10		
Power	USB computer cable, wall adapter or Lithium ion rechargeable battery		
Data Logging	500 points		
Auto Shut-Off	Disabled, 5, 10, 30 seconds		
Languages	English, French, Spanish, Japanese, Italian, Portuguese, Chinese		
Response Time	<2 Seconds		
Display	6-line LCD with backlit display		
Size	7.5 x 3.5 x 2.5 inches; 19.05 x 8.84 x 6.35 cm		
Weight	13 ounces		

GLOBE

pH Meters

Also See: pH/Conductivity TRACER pg. 33 | pH TRACER pg. 34

	pH 5 Plus		pH PLUS DIRECT 2			
	pH	Temperature	pH	Temperature	Concentration	mV
Order Code	w/out case Order Code 5-0034-01 with case Order Code 5-0035-01		pHPLUS Direct 2 meter, liquid buffers (4, 7, 10) w/case Order Code 5-1936-01 pH Electrode, gel filled Order Code 1904 Temperature Probe Order Code 1909			
Range:	0.00 - 14.00 pH	0.0 - 100.0°C	0.00 to 14.00 pH	001 to 100.0°C	0.01 to 1999 ppm	-500 to 500 mV
Resolution:	0.01 pH	0.1°C	0.01 pH	0.1°C	0.01, 0.1, 1 ppm	0.1 mV
Accuracy:	±0.01 pH	±0.5°C	±0.01 pH	±0.5°C	±1% of reading	±0.2, 2 mV
Calibration:	Auto Buffer Recognition Up to 3 Buffer Values (USA, NIST, Pb)	0.1°C increments	1 to 3 points (USA, NIST, pH)		2 to 3 points (min 2 points)	
Temperature Compensation:	Automatic/Manual (0 to 100°C)		Automatic/Manual (0 to 100°C)			
Power:	4 AAA alkaline batteries (supplied) 500 hours		4 AAA alkaline batteries (supplied) 500 hours			
Auto shut-off:	After 17 minutes		After 17 minutes			
Operating Temperature:	32 to 122°F; 0 to 50°C		32 to 122°F; 0 to 50°C			
Electrode:			Epoxy, Ag/AgCl			
Shipping	NH (3)		NH (3)			
Size:	2.8 x 5.8 x 1.4 in / 7.1 x14.7 x 3.6 cm					

Code 5-0034-01

Also See: Dissolved Oxygen TRACER pg. 34 | EC/TDS/Salt TRACER pg. 34

Code 5-0107-01

Digital Dissolved Oxygen & Temperature Meter

Order Code 5-0107-01 | NH (3)

Portable hand-held dissolved oxygen meter designed to provide measurements for the most critical water quality parameter. Digital readout provides mg/L, % saturation and temperature readings by selecting a mode. Features automatic temperature compensation (ATC) for mg/L and % saturation; salinity compensation is manual by direct dial. Meter comes packaged in a convenient carrying case with 2 replacement membrane cartridges, electrolyte and protective probe storage bottle.

- No meter warm-up required
- Low maintenance probe
- Key in salinity and pressure values manually
- Independent 100% and zero adjustment calibrations
- Offset adjustment capabilities
- Displays electrode diagnostics
- Easily toggle from mg/L (ppm) or % saturation to temperature mode

	Range	Resolution	Accuracy
mg/L	0.00 to 20.00 mg/L (ppm)	0.01 mg/L (ppm)	±1.5% FS
% Saturation	0.00 to 200.0%	0.1%	±1.5% FS
Temperature	-0.5 to 105°C	0.1°C	±0.5% C
Salinity Correction	0.0 to 50.0 ppt	0.1 ppt	Method: Automatic correction after manual input
Barometric Pressure Correction	500 to 1499 mm Hg (66.6 to 199.9 kPA)	1 mm Hg (0.1 kPA)	Method: Automatic correction after manual input
Temperature Compensation	Automatic or manual from 0.0 to 50.0°C		
% Saturation Calibration Points	100% in saturated air or air-saturated water 0% in zero oxygen solution		
Response TIme	60 seconds to achieve 95% of the reading		
Operating Temperature	0 to 50°C		
Probe	Galvanic/Thermistor; 3 ft probe cable		
Power	Fout 1.5V AA batteries (included), > 700 continuous use		
Dimensions	5.5 x 2.7 x 1.3 in / 14 x 6.9 x 3.3 cm		
Weight	1.0 lb (0.45 kg)		

Optional Accessories

Replacement probe w/3 ft cable

Order Code 5-0129 | NH (1)

DO Replacement membranes (2) and electrolyte solution

Order Code 5-0137 | NH (1)

Code 5-0038-02

Conductivity Meters

	CON 6 Plus Meter	TDS 6 Plus Meter	CON 6 Plus & TDS 6 Plus
	(Conductivity)	(TDS)	(Temperature)
Order Code	w/out case 5-0038-02 w/case 5-0039-02	w/out case 5-0036-02 w/case 5-0037-02	Included
Range:	0.0 to 20.00, 200.0, 2,000. µS/cm 0 to 20.00, 200.0 mS/cm	0.0 to 10.00, 100.0, 1000 ppm 0 to 10.00, 100.0, 200 ppt	-10.0 to 110.0°C
Resolution:	0.01, 0.1, 1µS, 0.01, 0.1 mS/cm	0.01, 0.1, 1 ppm, 0.01, 0.1, 1 ppt	0.1°C
Accuracy:	±1% full scale	±1% full scale	±0.5°C
Calibration:	one point per range (five points if each range is calibrated)		Offset 0.1°C increments
	Auto- or Manual-ranging		Selectable
	Auto Standard Recognition		Selectable (Con 6 Plus)
Temperature Compensation:	Automatic/Manual from 0 to 50°C		
Power:	4 AAA alkaline batteries (supplied) >60 hours continuous use		
Operating Temperature:	32 to 122°F; 0 to 50°C		
Shipping	NH (3)		
Size:	2.8 x 5.8 x 1.4 in / 7.1 x 14.7 x 3.6 cm		

Colorimetric Testing

Most test substances in water are colorless and undetectable by the human eye. Colorimeters and spectrophotometers are used to measure any test substance that is itself colored or can be reacted to produce a color. The definition of colorimetry is "the measure of color" and a colorimetric method is "any technique used to evaluate an unknown color in reference to known colors". In a colorimetric chemical test the intensity of the reaction must be proportional to the concentration of the substance being tested.

AP

SMART3 Colorimeter

Order Code 1910 | NH (6)

The user-friendly waterproof SMART3 Colorimeter is the direct reading colorimeter for complete on-site water analyses. Over 80 pre-programmed tests can be run on this compact instrument and each test features automatic wavelength selection. The entire multi-LED optical system is embedded in the light chamber and optimized for LaMotte test reagent systems. This enables the analyst to select a wavelength and read a reacted sample. The microprocessor, which selects the wavelength, also allows the user to load up to 25 tests for analyzing custom reagent systems. Features seven user selected languages. Comes with 6 sample tubes, USB wall/computer adapter and instruction manual.

Waterproof!

Code 1910

Description	Order Code	Shipping
Small Field Carrying Case	1910-GCS150	NH (7)
Large Field Carrying Case	1910-GCS440	NH (9)
USB Cable	1720	NH (1)
USB Wall Adapter	1721	NH (1)
COD/UDV Adapter	1724	NH (1)
Car Charger	5-0132	NH (1)
Bluetooth® Mobile Printer	5-0066	NH (2)

Bluetooth® Mobile Printer

Order Code 5-0066
NH (1)

Specifications

Light Source	LED/filter setup at 428nm, 525nm, 568nm, 635nm, 638nm
Detector	Photodiode
Display	160 x 100 Backlight LCD, 20 x 4 line graphic display
Range	0-125%T
Resolution	1% FS
Accuracy	2% FS
CE Mark	Yes
Sample Cell	25 mm round cell, 10 mm square cuvette, 16mm COD tubes
Power	USB computer/wall adapter or lithium ion rechargeable battery
Battery Life	Charge Life: Approx. 380 tests with backlight on to 1000 tests with backlight off. (Signal averaging diabled). Battery Life: Approx. 500 charges.
Datalogging	Up to 500 data points; USB transfer, time and date stamped
Calibration	Factory set-user adjustable
Keypad	6-button mechanical
Size	7.5 x 3.5 x 2.5 in / 19.1 x 8.9 x 6.4 cm
Weight	15 ounces

Code 2000-02

AP

SMART Spectro® 2 Spectrophotometer

Order Code 2000-02
(120V/60Hz and 220V/50Hz) | NH (17)

A spectrophotometer that is easy to use and more accurate than anything in its price range. With automatic wavelength selection, pre-programmed tests, and superior performance—this is the best spectrophotometer for the money!

- wide wavelength range
- menu-driven display
- high resolution, exceptional accuracy
- automatic wavelength selection
- unique optical design system using a 1200 lines/mm grating
- pre-programmed tests
- portable, includes 6 sample tubes (25mm round), 2 sample cell holders (25mm round and COD, 10 mm cuvettes), AC adapter, battery charger, instruction manual including test procedures and Quick Start Guide
- Optional Bluetooth® Mobile printer

Specifications

Wavelength Range:	350-1000 nm
Wavelength Accuracy:	±2 nm
Wavelength Resolution:	1 nm
Wavelength Bandwidth:	4 nm (max)
Photometric Range:	0-125%T, -0.3-2.500A
Photometric Accuracy:	±0.005A
Photometric Stray Light:	<0.4 %T @360 nm
Light Source:	Quartz halogen
Sample Chambers:	25 mm round cell, 10 mm square cuvette UDV, COD
Optical Mount:	Modified Ebert, 1200 grooves/mm ruled grating
Modes:	Conc., %T, ABS
Interface:	USB, Bluetooth® (Code 3-0066 mobile printer only)
Power:	110/220 volt or battery pack (rechargeable)
Weight:	4.65 kg (10.3 lb)
Size:	13.8 x 11 x 6.7 in / 35.1 x 27.9 x 17 cm

Standard Solutions

Test Factor	Size	Conc.	Code	Shipping
Ammonia-Nitrogen	60 mL	100 ppm	3871-H	NH
Chlorine	60 mL	250 ppm	6973-H	NH
Chlorine	60 mL	1000 ppm	3858-H	NH
Nitrate-Nitrogen	60 mL	1000 ppm	5392-H	NH
Phosphate	60 mL	1000 ppm	5393-H	NH
Sulfate	60 mL	2000 ppm	7120-H	NH
pH	120 mL	4.0 pH	2866-J	NH
pH	120 mL	7.0 pH	2881-J	NH
pH	120 mL	10.0 pH	2896-J	NH

Optional Accessories

Description	Order Code	Shipping
Carrying Case	2000-CS	NH (6)
Battery Pack with Holder (rechargeable)	2000-BP	NH (2)
Replacement Sample Cells (round)	0290-6	NH (1)
Cuvettes	29653-10	NH (1)
COD Heater Block (also for Total N & P analysis)	5-0102	NH (15)
Bluetooth® Mobile Printer	5-0066	NH (2)

Bluetooth® Mobile Printer

Order Code 5-0066
NH (1)

SMART Spectro® 2 & SMART3 Reagent Systems

Test Factor	Test Method (# of reagents)	SMART Spectro® 2 Range ppm	SMART3 Colorimeter Range ppm	# of Tests	Order Code	Shipping
Alkalinity UDV **	Unit Dose Vial (1)	15-200	10-250	100	4318-J	NH
Aluminum †R	Eriochrome Cyanine R (4)	0.01-0.30	0.01-0.30	50	3641-01-SC	NH
Ammonia Nitrogen †R (Fresh & Salt Water)	Salicylate (3)	0.02-1.00/ 0.10-1.00	0.05-1.00/ 0.10-1.00	25	3659-01-SC	LQ
Ammonia Nitrogen HR †R	Nesslerization (2)	0.05-4.00	0.05-4.00	50	3642-SC	R1
Barium	Barium Chloride (1)	----	5-200	50	3638-SC	NH
Biquanide	Colorimetric (1)	5-70	2-70	50	4044	NH
Borate UDV**	Unit Dose Vial (1)	----	5.0-80.0	100	4322-J	NH
Boron	Azomethine-H (2)	0.05-0.80	0.05-0.80	50	4868-01	NH
Bromine	DPD Liquid (3)	0.10-9.00	0.10-9.00	50	4859	NH
Bromine LR	DPD Tablets (3)	0.04-9.00	0.10-9.00	100	3643-SC	NH
Bromine UDV**	Unit Dose Vial DPD (1)	0.3-22.0	0.1-22.0	100	4311-J	NH
Cadmium †R	PAN (4)	0.02-1.00	0.02-1.00	50	4017-01	R1
Carbohydrazide	Iron Reduction (3)	0.005-0.900	0.04-0.90	100	4857	R1
Chloride TesTab	Argentometric (1)	0.5-30.0	0.4-30.0	50	3693-SC	NH
Chlorine (Free & Total)	DPD Tablets (3)	0.02-4.00	0.03-4.00	100	3643-SC	NH
Chlorine - Free UDV**	Unit Dose Vial (1)	0.10-10.00	0.10-10.00	100	4311-J	NH
Chlorine - Liquid DPD	DPD (3)	0.30-4.00	0.03-4.00	144	4859	R1
Chlorine - Total UDV†	Unit Dose Vial (1)	0.1-10.0	0.10-10.00	100	4312-J	NH
Chlorine Dioxide	DPD tablet/Glycine (2)	0.04-7.00	0.06-8.00	100	3644-SC	NH
Chromium (Hexavalent)	Diphenylcarbohydrazide (1)	0.01-1.00	0.01-1.00	100	3645-SC	HF
Chromium (Total, Hex & Trivalent)	Diphenylcarbohydrazide (5)	0.03-1.00	0.01-1.00	100	3698-SC	HF
Cobalt †R	PAN (3)	0.02-2.00	0.04-2.00	50	4851-01	HF
COD LR with Mercury *	Digestion (1)	7.5-150 mg/L	7.5-150 mg/L	25	0075-SC	R1
COD LR without Mercury *	Digestion (1)	7.5-150 mg/L	7.5-150 mg/L	25	0072-SC	R1
COD SR with Mercury*	Digestion (1)	50-1,500 mg/L	50-1,500 mg/L	25	0076-SC	R1
COD SR without Mercury*	Digestion (1)	50-1,500 mg/L	50-1,500 mg/L	25	0073-SC	R1
COD HR with Mercury* †R	Digestion (1)	500-15,000 mg/L	500-15,000 mg/L	25	0077-SC	R1
COD HR without Mercury *	Digestion (1)	500-15,000 mg/L	500-15,000 mg/L	25	0074-SC	R1
Color	Platinum Cobalt (0)	15-1,000 cu	20-1,000 cu	∞	NA	NH
Copper BCA - LR	Bicinchoninic Acid (1)	0.05-3.50	0.04-3.50	50	3640-SC	NH
Copper - Cuprizone	Cuprizone (2)	0.01-2.00	0.03-2.00	50	4023	R1
Copper DDC †B	Diethyldithiocarbamate (1)	0.05-6.00	0.10-6.00	100	3646-SC	NH
Copper UDV†	Unit Dose Vial, Bicinchoninic acid (1)	0.2-4.0	0.1-4.0	100	4314-J	NH
Cyanide	Pyridine-Barbituric Acid (5)	0.05-0.50	0.03-0.35	50	3660-01-SC	R1
Cyanuric Acid	Melamine (1)	16-200	10-200	40	3661-01-SC	NH
Cyanuric Acid UDV**	Unit Dose Vial, Melamine (1)	5-150	10-150	100	4313-J	NH
DEHA	Iron Reduction (3)	0.005-0.700	0.01-0.70	100	4857	R1
Dissolved Oxygen (DO)	Winkler Colorimetric (3)	0.3-12.0	0.6-11.0	200	3688-SC	R1
Erythorbic Acid	Iron Reduction (3)	0.02-3.00	0.02-3.00	100	4857	R1
Fluoride †B	SPADNS (2)	0.1-2.0	0.1-2.0	50	3647-02-SC	R1
Hardness (Total) UDV**	Unit Dose Vial (1)	10-500	10-500	100	4309-J	NH
Hydrazine	P-dimethylaminobenzaldehyde (2)	0.010-0.750	0.01-0.75	50	3656-01-SC	NH
Hydrogen Peroxide LR	DPD (2)	0.02-1.50	0.02-1.50	100	3662-SC	NH
Hydrogen Peroxide HR	DPD (2)	1-60	1-60	100	4045-01	NH
Hydrogen Peroxide Shock	DPD (2)	4-225	10-225	100	4045-01	LQ

*Requires COD Heater Block, not included. Code 5-0102 | ** Requires Accessory Package Code 1961 or Code 1962 (sold separately) | Shipping Codes listed in front of catalog.

† Prop 65: **C**: ⚠ **WARNING** Cancer - www.P65Warnings.ca.gov/product; **R**: ⚠ **WARNING** Reproductive Harm - www.P65Warnings.ca.gov/product; **B**: ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

AP

SMART Spectro® 2 & SMART3 Reagent Systems

Test Factor	Test Method (# of reagents)	SMART Spectro® 2 Range ppm	SMART3 Colorimeter Range ppm	# of Tests	Order Code	Shipping
Hydroquinone	Iron Reduction (3)	0.01-1.80	0.01-2.00	100	4857	R1
Iodine	DPD Tablets (2)	0.08-14.00	0.2-14.0	100	3643-SC	NH
Iron	Bipyridyl (2)	0.06-6.00	0.10-6.00	50	3648-SC	R1
Iron UDV**	Unit Dose Vial Bipyridyl (1)	0.07-10.00	0.1-10.0	100	4315-J	NH
Iron - Phenanthroline	1,10 Phenanthroline (2)	0.04-4.50	0.1-5.0	50	3668-SC	R1
Lead †C	PAR (5)	0.1-5.0	0.1-5.0	50	4031-01	R1
Manganese LR †R	PAN (3)	0.02-0.70	0.01-0.70	50	3658-01-SC	HF
Manganese HR	Periodate (2)	0.3-15.0	0.3-15.0	50	3669-SC	R1
Methylethylketoxime	Iron Reduction (3)	0.02-3.00	0.01-3.00	100	4857	R1
Molybdenum HR	Thioglycolate (3)	0.2-15.0	0.6-50.0	50	3699-03-SC	R1
Nickel †R	Dimethylglyoxime (6)	0.06-8.00	0.15-8.00	50	3663-01-SC	HF
Nitrate Nitrogen LR †B	Cadmium Reduction (2)	0.05-3.00	0.10-3.00	20	3649-SC	R1
Nitrate Tablet	Zinc Reduction (1)	3-60	5-60	50	3689-SC	NH
Nitrate UDV†	Unit Dose Vial Zinc Reduction	----	2-80	50	4321-J	NH
Nitrite Nitrogen LR	Diazotization (2)	0.02-0.80	0.02-0.80	20	3650-SC	NH
Nitrogen, Total*	Chromotropic Acid/ Digestion (6)	2-25 mg/L	3-25 mg/L	25	4026-01	R1
Oxygen Scavengers	Iron Reduction	various	various	100	4857	R1
Ozone	DPD (3)	----	0.03-3.00	100	4881-01	NH
Ozone LR	Indigo Trisulfonate (3)	0.02-0.40	0.01-0.40	100	3651-SC	NH
Ozone HR	Indigo Trisulfonate (3)	0.05-1.50	0.05-2.50	20	3651-SC	NH
pH CPR	Chlorophenyl Red (1)	pH 5.0-7.0	pH 5.0-6.8	100	3700-01-SC	NH
pH PR	Phenol Red (1)	pH 6.6-8.4	pH 6.6-8.4	100	3700-01-SC	NH
pH TB	Thymol Blue (1)	pH 8.0-9.5	pH 8.0-9.5	100	3700-01-SC	NH
Phenol †C	Aminoantipyrine (3)	0.05-6.00	0.05-6.00	50	3652-01-SC	NH
Phosphate LR	Ascorbic Acid Reduction (2)	0.04-3.00	0.05-3.00	50	3653-SC	LQ
Phosphate HR †C	Vanodomolybdovanadate Acid (1)	1.0-70.0	0.5-70.0	50	3655-SC	R1
Phosphate, ppb	Ascorbic Acid/Digestion (5)	----	50-3000	50	3653-SC	R2
Phosphorus, Total - LR*	Ascorbic Acid/Digestion (5)	0.07-3.50 g/L	0.50-3.50 mg/L	25	4024-01	R1
Phosphorus, Total - HR*	Molybdovanadate/ Digestion (5)	5.0-100.0 mg/L	5-100mg/L	25	4025-01	R1
Potassium	Tetraphenylboron (2)	0.5-10.0	0.8-10.0	100	3639-SC	R1
Silica LR	Heteropoly Blue (4)	0.03-2.50	0.05-4.00	100	3664-SC	R1
Silica HR	Silicomolybdate (3)	1-50	1-75	50	3687-SC	R1
Sulfate HR	Barium Chloride (1)	5-100	3-100	100	3665-SC	R1
Sulfide LR	Methylene Blue (3)	0.02-1.00	0.06-1.50	50	3654-02-SC	R1
Surfactants †B	Bromthymol Blue (3)	0.5-8.0	0.5-8.0	100	4876-01	HF
Tannin	Tungsto-Molybdophosphoric Acid (2)	0.2-10.0	0.1-10.0	50	3666-01-SC	R1
Turbidity	Absorptimetric (0)	2-500 FAU	3-500 FAU	∞	NA	NH
Zinc LR †B	Zincon (6)	0.03-3.00	0.05-3.00	50	3667-01-SC	HF

*Requires COD Heater Block, not included. Code 5-0102 See page 42 | **Requires Accessory Package Code 1961 or Code 1962 (sold separately) | Shipping Codes listed in front of catalog.

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SMART3 Water Analysis Laboratory

Order Code 1951-03† | LQ (37)
Reagent Refill R-1951-03† | LQ (10)

- measure 24 water quality parameters with this versatile portable lab!
- analyzes test sample color and provides direct readouts for 15 factors
- includes digital meters to measure pH, conductivity and TDS
- direct reading titrators provide results for 6 additional factors directly in ppm
- the SMART3 Colorimeter is programmed to provide direct readouts for over 80 factors using optional reagent packages

Also See: The Water Quality Educator & Monitoring Outfit pg. 12
AP® The Water Quality Assessment Package pg.13

Code 1951-03

SMART3 Colorimeter Tests

Test Factor	Test Method	Range (# Test)
Ammonia-Nitrogen	Salicylate	0.05-4.0 ppm (50)
Chlorine	DPD	0.03-4.0 ppm (100)
Bromine	DPD	0.10-9 ppm (100)
Iodine	DPD	0.2-14 ppm (100)
Chromium (Hexavalent)	Diphenylcarbohydrazide	0.01-1.0 ppm (100)
Copper	Diethyldithiocarbamate	0.10-6.0 ppm (100)
Fluoride	SPADNS	0.1-2.0 ppm (50)
Iron	Bipyridyl	0.10-6.0 ppm (50)
Nitrate-Nitrogen	Cadmium Reduction	0.10-3.0 ppm (20)
Nitrite-Nitrogen	Diazotization/Coupling	0.20-0.8 ppm (20)
Phosphate	Ascorbic Acid Reduction	0.05-3.0 ppm (50)
Silica	Heteropoly Blue	0.05-4.0 ppm (50)
Sulfate	Barium Chloride	3-100 ppm (50)
Sulfide	Methylene Blue	0.06-1.50 ppm (50)
Turbidity	Absorption (no rgts)	3-400 NTU (∞)

† ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Meters

Test Factor	Code	Model	Range
pH	5-0034-01	pH5 Plus	pH 0-14
Conductivity	5-0038-02	CON6 Plus CON6	0-1999 µS/cm 2.00-19.99 mS
Colorimeter	1910	SMART3	See chart

Test Kits

Test Factor	Test Method	Range (# Test)
Alkalinity	Neutralization	0-200 ppm (50 at 200 ppm)
Carbon Dioxide	Neutralization	0-50 ppm (50 at 50 ppm)
Chloride/Salinity	Argentometric	0-200 ppm (50 at 200 ppm)
Dissolved Oxygen	Winkler Method	0-10 ppm (50 at 10 ppm)
Hardness (Calcium, Magnesium,& Total)	Complexometric	0-200 ppm (50 at 200 ppm)

Also Available

Description	Order Code	Shipping
SMART3 Colorimeter Lab without pH, Conductivity Meters	1991-02	LQ (34)
Reagent Refill	R-1991-02	LQ (10)

Code 3633-05

Fresh Water Outfit

Grades 6 and up

Order Code 3633-05† | LQ (10)
Reagent Refill R-3633-05† | LQ (4)

Healthy aquariums require routine water quality tests to maintain proper water balance. This outfit contains all you need!

Octa-Slide 2 Comparator Tests

Test Factor	Test Method	Range (# Tests)
Ammonia Nitrogen	Salicylate	0.0-2.0 ppm (50)
Nitrite Nitrogen	Diazotization/ Coupling	0.05-0.8 ppm (50)
pH†	Wide Range	5.0-10.0 ppm (50)

† ⚠ **WARNING** Cancer and Reproductive Harm – www.P65Warnings.ca.gov/product

Temperature

Test Factor	Range
Armored Thermometer	–5° to 45°C

Octa-Slide 2 Comparator Tests

Test Factor	Test Method	Range (# Tests)
Ammonia Nitrogen	Salicylate	0.0-2.0 ppm (50)
Nitrite Nitrogen	Diazotization/ Coupling	0.05-0.8 ppm (50)
pH†	Wide Range	5.0-10.0 ppm (50)

† ⚠ **WARNING** Cancer and Reproductive Harm – www.P65Warnings.ca.gov/product

Code 3635-05

Salt Water Outfit

Grades 6 and up

Order Code 3635-05† | LQ (10)
Reagent Refill R-3635-04† | LQ (4)

Contains equipment necessary to monitor the 9 parameters most critical to the salt water analyst. Same packaging as shown, with 50 tests for each factor.

Octa-Slide 2 Comparator Tests

Test Factor	Test Method	Range (# Tests)
Ammonia Nitrogen	Salicylate	0.0-2.0 ppm (50)
Nitrate Nitrogen	Cadmium Reduction	0.25-10.0 ppm (40)
Nitrite Nitrogen	Diazotization/ Coupling	0.05-0.8 ppm (50)
pH†	Wide Range	5.0-10.0 (50)

Direct Reading Titrator Tests

Test Factor	Test Method	Range (# Tests)
Alkalinity	Neutralization	0-200 ppm (50)
Carbon Dioxide	Neutralization	0-50 ppm (50)
Dissolved Oxygen	Winkler Method	0-10 ppm (50)
Salinity	Argentometric	0-20 ppt (50)

Temperature

Test Factor	Range
Armored Thermometer	–5° to 45°C

† ⚠ **WARNING** Cancer and Reproductive Harm – www.P65Warnings.ca.gov/product

Hydroponics

Hydroponics culture is the growing of plants in a controlled environment with nutrien solutions, but without the use of soil as the supporting medium. Plant roots are fed directly, which is contrast to conventional methods where plant food is applied to teh soil and the roots extract the nutrients fromt he soil. Plants are wither grown directly in nutrient solution with only structural support or in beds through which nutrient solutions are periodically recirculated.

Hydroponics 4-Way Kit

Grades 6 and up

Order Code 3561-01† | HF (7)
Reagent Refill R-3561† | HF (3)

Maintain proper nutrient balances and achieve optimum growing conditions in soil-less cultures. An abbreviated version of our popular Hydroponics Combination Kit (5406).

- offers tests for pH and three key nutrient factors: nitrogen, phosphorus and potassium
- sufficient reagents for 50 tests per factor
- complete labware in a sturdy case
- *Plant Nutrition Studies* handbook

Octa-Slide 2 Comparator Tests

Factor	Range	# Tests
pH	4.5-8.0	50
Phosphorus	3-30 ppm	50
Nitrate Nitrogen	5-200 ppm, by dilution	50
Potassium	0-250 ppm	50

† ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Code 3561-01

Aquaponics Kit

Grades 5 and up

Order Code 3637† | LQ (9)
Reagent Refill R-3637† | LQ (4)

NEW!

Aquaponics is growing rapidly as a hobby and as an industry as the farm-to-table trend continues to spread. Designed for small to mid-size systems, this test kit monitors basic water quality for both the aquaculture and hydroponics segments of your system. A detailed, diagrammed instruction manual is provided along with a quick reference lid instruction. Reagents, labware and accessories are mounted in a foam-lined carrying case. Kit is complete with labware, accessories, and reagents to perform approximately 50 repetitions per test factor. Test chemistries and comparators are compatible with fresh, brackish, or salt water systems.

Octa-Slide 2 Comparator

Test Factor	Test Method	Range
Ammonia-N	Salicylate	0-2.0 ppm
Nitrite-N	Diazotization/Coupling	0.05-0.8 ppm
Nitrate-N	Zinc Reduction	0-15 ppm
pH	Wide Range Indicator	5.0-10.0
Iron, Ferrous & Ferric	Bipyridyl indicator	0.5-10.0 ppm

Direct Reading Titrator

Test Factor	Test Method	Range
Alkalinity	Acid/Base	0-200 ppm
Dissolved Oxygen	Modified Winkler	0-10 ppm

† ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Code 3637

Code 5928-02

Soil Macronutrients

Grades 6 and up

Order Code 5928-01† | HF (17)
Reagent Refill R-5928† | HF (7)

Learn the preparation, extraction and filtration techniques and procedures developed specifically for the testing of soil nutrients. This is a comprehensive introduction to the study of soil properties.

- an easy-to-use soil sampling tube
- Soil Texture Unit (page 51)
- soil sampling bags
- individual test modules for 4 important soil test factors

† ⚠ **WARNING** Reproductive Harm - www.P65Warnings.ca.gov/product

Octa-Slide 2 Comparator

Test Factor	Range	# Tests
pH	3.8 -9.6	40

Color Chart

Test Factor	Range	# Tests
Nitrogen	10-150 lb/acre	50
Phosphorus	10-200 lb/acre	50

Turbidity Column

Test Factor	Range	# Tests
Potassium	100-400 lb/acre	30

Accessories

Description	Code	# Tests
Soil Texture Unit	1067	50
Soil Sample Bags	0615-J	50
Soil Sampling Tube	1055	50

Soil Sampling Bags

Order Code 0615-J | NH (1)

Directions printed right on the bag explain how to collect and to prepare soil samples! The 6 x 4 inch (15 x 10 cm) plastic zipper bags prevent contamination or accidental mixing of samples ensuring accurate test results. Package of 100.

Code 5563

Code 5938-01

Soil Micronutrients

Grades 6 and up

Order Code 5938-02† | R1 (19)
Reagent Refill R-5938-01† | R1 (5)

A great supplement to the Soil Macronutrients Outfit includes individual test modules for 9 test factors.

Color Chart

Test Factor	Range	# Tests
Aluminum	5-150 ppm	50
Ammonia	5-150 ppm	50
Calcium	150-2800 ppm	50
Chlorides	25-500 ppm	50
Iron	5-125 ppm	50
Magnesium	5-150 ppm	50
Manganese	4-40 ppm	50
Nitrite	1-50 ppm	50
Sulfate	50-200 ppm	50

† ⚠ **WARNING** Reproductive Harm - www.P65Warnings.ca.gov/product

Also See: Nitty Gritty Soil Science pg. 31 | Soil Sampler pg. 47 | Garden Guide pg. 47
Soil Texture Unit pg. 47 | Soil Microbee HUnter pg. 47

GLOBE

NPK Soil Test Kit

Grades 5 and up

Order Code 3-5880 | NH (1)

Specifically designed to meet the needs of the GLOBE Program™, this kit is safe, fun and can easily ship anywhere!

- 50 tests each for nitrogen, phosphorus and potassium
- simple, diagrammed instructions
- all necessary apparatus
- laminated color chart
- uses TesTabs®

English, Spanish & French Instructions!

Code 3-5880

Soil pH Test Kit

Grades 5 and up

Order Code 5912 | NH (1)

By popular demand, TesTabs® method. Companion to NPK Soil Kit (Code 3-5880). Simple diagrammed instructions.

- 50 tests for pH
- Wide range 4-11 in 1.0 pH units
- Distilled or deionized water recommended

English, Spanish & French Instructions!

Code 5912

Soil pH Test Kit

Grades 5 and up

Order Code 5024† | NH (1)
Reagent Refill 2221-G† | NH (1)

Our most popular pH soil kit. Supplied with a color chart and plastic spot plate. pH affects all mineral elements and the biological process made available to plants from the soil. Accurate pH testing is essential to determine lime requirements and to insure that a mineral-rich soil is also a fertile one. 100 tests.

† ⚠ **WARNING** Reproductive Harm - www.P65Warnings.ca.gov/product

Code 5024

Code 5026-01

Plant Macronutrient Kit

Grades 6 and up

Order Code 5026-01† | LQ (3)
Reagent Refill R-5026† | LQ (2)

Students perform colorimetric tests for nitrogen, phosphorus and potassium from plant tissue liquid extracts. Quantitative results given as abundant, adequate and deficient only. 50 tests per factor.

Colorimetric Tests

Nitrogen	Phosphorus	Potassium

† ⚠ **WARNING** Reproductive Harm - www.P65Warnings.ca.gov/product

Plant Micronutrient Kit

Grades 6 and up

Order Code 5261-01† | R1 (3)
Reagent Refill R-5261† | R1 (2)

Students extract sap onto filter paper from freshly cut plant tissue, then perform color spot tests for boron, copper, ferrous and ferric iron, manganese and zinc. Indicates presence/absence only. 50 test per factor, 25 for Boron.

Color Spot Tests

Boron	Copper	Ferrous/Ferric Iron
Manganese	Zinc	

† ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Plant Tissue

Plant tissue testing provides essential information concerning plant use of nutrients vital to their growth. These simplified field tests for green plant tissue indicate whether growing plants are receiving adequate amounts of nutrients from the soil. All tests give qualitative results for specific nutrients. By comparing test results from healthy and problem plants, it is possible to pinpoint deficiencies or excessive nutrient conditions.

Code 5940

Plant Nutrition Solutions

Grades 6 and up

Order Code 5940 | LQ (7)

Contains 10 stock solutions of macronutrients and trace elements—sufficient to prepare five liters of each mixture. Includes *Plant Nutrition Studies* handbook.

† Prop 65: **C**: ⚠ **WARNING** Cancer - www.P65Warnings.ca.gov/product; **R**: ⚠ **WARNING** Reproductive Harm - www.P65Warnings.ca.gov/product; **B**: ⚠ **WARNING** Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Also See: NPK Soil Kit pg 45 | Soil pH Testab® Kit pg.45 | Soil pH kit pg 45

Garden Guide Kit

Grades 5 and up

Order Code 5679-01 | LQ (4)
Reagent Refill R-5679-01 | LQ (3)

Daffodils drooping? Spinach looking sad? Need to test your garden soil? Use this simple economical kit to measure nitrogen, phosphorus, potassium (15 tests each) and soil pH (30 tests).

- diagrammed instructions
- laminated color charts
- *Garden Guide* manual
- *LaMotte Soil Handbook*
- *A Study Of Soil Science*

Code 5679-01

Soil Texture Unit

Grades 5 and up

Order Code 1067 | NH (2)
Reagent Refill R-1067 | NH (1)

A great kit for testing and demonstrating different soil textures and properties. Students test soil from the schoolyard, or can compare soil samples brought from home. 50 tests.

Code 1067

AP

Soil Sampling Tube

Order Code 1055 | NH (2)

A 12" galvanized steel sampler with a 1" core diameter, saw-toothed tip. A cut-away side allows examination of core prior to removal for testing. Comes with 20 soil sampling bags.

Code 1055

Soil Microbe Hunter

Grades 5 and up

Order Code 5563 | NH (1)

Students research the process of soil formation, soil characteristics, and the influence of environmental conditions on soil microbe populations. Students assess and sample various soil ecosystems using the surface contact impression technique, dilution technique, root wash technique, and the Rossi-Cholodny buried slide contact transfer technique. Microbes are identified and enumerated to calculate microbial diversity.

Activities and topics include the effect of fertilizer on lawn microbe populations, rhizosphere ecosystems, biological soil crusts, and biopesticides. STEM extension activities include *Is There Such a Thing as Sterile Soil?*, *Investigating Soil Inoculants* and *Soil Crust Hunt*.

Code 5563

HANDBOOKS

Code 1593

Code 1592

Code 1587

Code 1589

Code 1532

Limnology: An Introduction To The Fresh Water Environment

William H. Amos

Order Code 1593

A concise handbook dealing with biological, chemical and physical processes of fresh water including stream dynamics, plant zonation, energy cycle of ponds and much more. 40 pages.

Our Environment Battles Water Pollution

Dr. Charles E. Renn

Order Code 1592

Follow a theoretical river from its origin to its discharge. Includes discussion of the chemical and biological changes that occur as the river reacts to impurities from natural and industrial sources. 32 pages.

A Laboratory Manual For Marine Science Studies

Staff, LaMotte Company

Order Code 1587

A detailed guide of sampling procedures and water quality analysis in salt water environments, including description of reagents, labware and test procedures. 32 pages.

Investigating Water Problems

Dr. Charles E. Renn

Order Code 1589

A comprehensive handbook describing 25 water quality test factors including analytical procedures, test result interpretation, illustrations and helpful glossary. 72 pages.

A Study Of Water Quality

Dr. Charles E. Renn

Order Code 1532

Examines in-depth the life cycle of water from natural occurences to treatment for domestic/industrial use. Emphasizing problems such as scaling, corrosiveness, taste and turbidity. 46 pages.

The LaMotte Soil Handbook

Staff, LaMotte Company

Order Code 1504

A manual for both "growers" and soil investigators! Provides information on major and minor nutrients, trace elements, soil pH, organic matter and soil texture. Also includes lime and fertilizer recommendations for a variety of crops and plants. 60 pages.

A Study Of Soil Science

Dr. Henry D. Foth

Order Code 1530

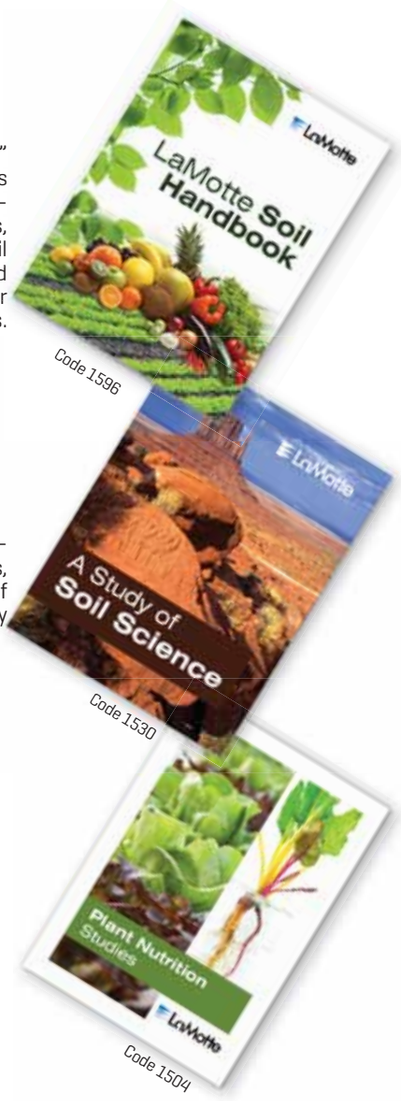
An introduction to soil formation, soil pH, mineral elements, plant nutrition, the life cycle of growing plants, and soil fertility management. 44 pages.

Plant Nutrition Studies

Dr. Robert Stegner

Order Code 1596

A study of hydroponics. Includes a series of laboratory procedures and open-ended investigations. 76 pages.



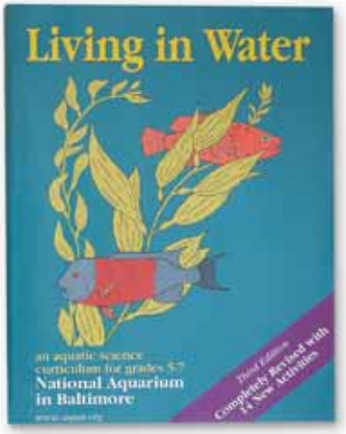
Code 1596

Code 1530

Code 1504

BioPaddles® Colony ID™ Lite app

Free app for iPads lets users compare colony examples on BioPaddle agar types from 5 microhabitats (air, water, soil, surface and food). Also contains information regarding organisms, microbiological techniques, and more! Visit www.lamotte.com and click on BioPaddles for a direct link. See page 24



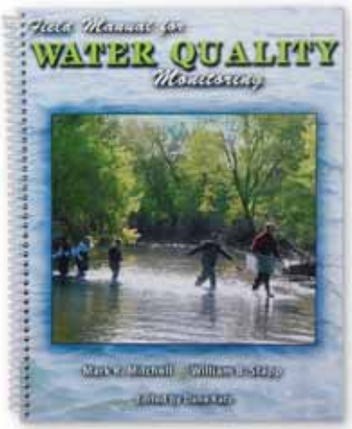
Code 1598

Living in Water

Department of Education at the National Aquarium in Baltimore

Order Code 1598

An aquatic science textbook containing 50 activities that integrate physical, earth and life science. It can be used as a complete curriculum or individual activities. Classroom based scientific studies of water, aquatic environments and the plants and animals that live in water. Field studies can be adapted for use in any body of water form the ocean to a fish bowl. 395 pages.



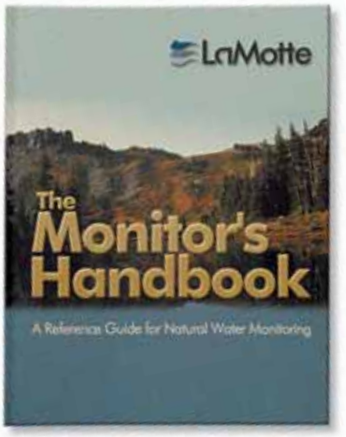
Code 3-1508

Field Manual for Water Quality Monitoring

Mark K. Mitchell, William B. Stapp

Order Code 3-1508

Serves as the standard text for school-based water quality monitoring programs in schools around the world. The manual describes nine water quality tests: dissolved oxygen, fecal coliform, pH, total solids, total phosphorus, nitrates, turbidity, biochemical oxygen demand, and temperature. Also includes chapters on heavy metals testing, land use practices and computer networking. The current edition specifically features LaMotte water quality test kits. 145 pages.



Code 1507

The Monitor's Handbook

A Reference Guide for Natural Water Monitoring

Staff, LaMotte Company

Order Code 1507

A valuable water quality analysis reference guide, providing comprehensive overviews of monitoring streams, lakes, rivers and estuaries. Includes physical, biological and chemical factors of water quality and analytical procedures for their measurements. The basics of waterway surveying, program planning, data reporting and analyzing are also described. 71 pages.

Environmental Science Education Products: Reagent Refills, Parts & Accessories

A guide for refilling or refurbishing test kits. Organized by kit code number for easy reference. Ordering information for complete kit reagent refills and for individual reagents and components. Includes reagent shelf life information and current pricing.

Are My Reagents Still Good?

Informative guide to understanding lot numbers and expiration dates to achieve accurate test results and the most economical use of reagents.

www.lamotte.com

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Photo Contest

The LaMotte Company Science Education Photo Contest is an opportunity to win **FREE LaMotte equipment** for your school, educational program or volunteer monitoring group. Many winners appear in upcoming LaMotte catalogs and publications, or on the website. Please read and follow the guidelines below when planning and submitting your entry.

- Photo(s) must show current LaMotte testing products being properly used by students in the classroom, lab or outdoors. Safety equipment (gloves, goggles, tec.) must be worn when applicable.
- Please indicate a brief description of how LaMotte products are used in your program.
- Photo(s) should be good quality color prints. Digital files should be high resolution (300 ppi) and supplied on disk or CD. All submissions must be accompanied by a completed entry form and signed photo release. Call LaMotte or visit our website www.lamotte.com for entry and release forms.
- Submissions must reach the LaMotte Company advertising office by the **Friday after Thanksgiving** to be eligible for prizes.
- Prizes will only be awarded to educational institutions and organizations.
- All submissions become the property of LaMotte Company. Please send original photos, slides or hi-res digital photos. Make copies for your use before submitting. Sorry, but submitted photos and slides cannot be returned.
- Winners will be notified by the end of February.
- All prizes are merchandise certificates for LaMotte equipment.

Merchandise Certificates

First Place!
$500

Second Place!
$200

Third Place!
$100

3 Honorable Mentions
$50

www.lamotte.com

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Mail PO Box 329
Chestertown, MD 21620 USA

www.lamotte.com

Prices

Are subject to change without prior notice. Prices are f.o.b. Chestertown, Maryland. A $7.50 handling fee and a $7.50 shipping fee are applied to all orders totaling less than $35.00.

Payment Terms

Are net thirty days to accounts with established credit with LaMotte Company. New accounts should provide credit references or enclose payment with the purchase order. VISA/MasterCard/AMEX accepted.

Product Code Numbers

Please include product code numbers and quantities.

Disclaimer

Descriptions and photography within this catalog are believed to be accurate. LaMotte reserves the right to revise products and prices without notification of change.