050591

Districts 3 and 6

VILLAGE OF LOMBARD
REQUEST FOR BOARD OF TRUSTEES ACTION
For Inclusion on Board Agenda

_____	Resolution or Ordinance (Blue)
___X___	Recommendations of Boards, Commissions & Committees (Green)
_____	Other Business (Pink)

TO: PRESIDENT AND BOARD OF TRUSTEES

FROM: William T. Lichter, Village Manager

DATE: October 26, 2005 (COW) (B of T) Date: November 3, 2005

TITLE: Educational Recycling Grant Applications

SUBMITTED BY: John Burg, Assistant Director of Public Works

BACKGROUND/POLICY IMPLICATIONS:

See attached memo.

Fiscal Impact/Funding Source:

Community Recycling Fund (2790.777500), total of $7,160.60

Review (as necessary):
Village Attorney X _____ Date _____
Finance Director X _____ Date _____
Village Manager X W.T. Lichter Date 10/26/05

NOTE: All materials must be submitted to and approved by the Village Manager's Office by 12:00 noon, Wednesday, prior to the Agenda Distribution.

To: William Lichter, Village Manager

Through: Wes Anderson, Director of Public Works W.B.

From: John Burg, Assistant Director of Public Works

Date: October 26, 2005

Subject: Educational Recycling Grants

At the meeting on October 25, 2005 the Environmental Concerns Committee recommended approval of the following Educational Recycling Grants: $610.00 for Chicagoland Academy, $2,150.00 for Manor Hill School, $2,395.60 for Montini High School, and $2,005.00 for Willowbrook High School.

I also recommend approval of these four Educational Recycling Grants. Please place this item on the November 3, 2005 agenda for consideration by the Village President and Board. Call me with questions.

SOLID WASTE RECYCLING GRANT PROGRAM- EDUCATIONAL

Village of Lombard, Illinois

Application Form (Last revised 1-31-05)

Part 1 – GENERAL INFORMATION Today's date: 10/13/05

Name Of School: Chicagoland Academy Grant Contact Phone: (day) 620-8950 (evening)_____

Address: 241 E. Roosevelt Rd & 815 S. Finley Rd.

Number of students at school 68 Estimated number of students living in corporate limits of Village of Lombard 25

Name/Title of Person Submitting Application: Char Miller - Director

Part 2 – EFFECTIVENESS OF CURRENT PROGRAM (recycling, environment, conservation)

a. Have you earned an "Earth Flag"? Yes ____ No ✓ If yes, list years _____

b. Do you have an environmental club? Yes ____ No ✓ If yes, how many are in the club and how long has the club been in existence? _____

c. How many students participate in recycling/environmental/conservation efforts? 68

d. How many students are being taught about recycling/environment/conservation? 68

e. How many students will the grant funds help to educate? 68

f. How is the recycling/environmental/conservation program emphasized in your classes throughout the school?

g. In your typed report, explain your current recycling/environmental/conservation program and past accomplishments. How long have you had a recycling/environmental/conservation program? What does the school do for the environment besides recycling? How has the school program helped people in the Village of Lombard?

Attach typed explanation.

Part 3 – FINANCIAL COMMITMENT AND PROJECT DESCRIPTION

a. Has the school received grant money from the Village of Lombard? Yes ✓ No ____

b. Amount of grant request? 5323.00

c. Provide detailed description in report of items requested and costs. **If the grant involves commodity purchases, provide three quotes including companies and prices.** If recycled products are being purchased, list what percentage of products is made from recycled products.

Attach typed explanation.

$610.

13-Oct-05

Solid Waste Recycling Grant

Part 2 –f.

All classrooms at Chicagoland Academy recycle paper, water bottles and cans. The school, once again, participated in Lombard's Recycling Extravaganza where many computers, monitors, printers and other items were dropped off. We participate throughout the year in the Cartridges For Kids recycle program. In this program we have the kids collect old cell phones (where we gathered over 30 phones) and ink cartridges and send them in to be recycled. We continue to use SCARCE as a source for many items, this includes old school desks and chairs that we have refinished and are currently in use in many of our classrooms. Additionally, we collect many recyclable materials from our parents for the various projects our students do throughout the year. Several of our teachers tour SCARCE and their "recycled projects for teachers" room during the year and obtain many great recyclable project ideas that can be seen throughout our school.

Part 2 –g.

We teach many units throughout the year where the primary focus being how our students and their families effect the environment. This past year we had our 3rd through 8th grades walk Sunset Knoll Park District grounds where they cleaned-up the trash. They did this in the fall and in the spring. They are planning another clean-up effort in November and again around Earth Day. In addition, we had Fullersburg Woods visit our Preschool – 2nd grades, and the older students went to the onsite facility where they learned many conservation facts. We will repeat this event again in the spring of this year. We also do a yearly visit to Morton Arboretum. The kids also participated in a Scholastic program where they collected 200 water bottles to recycle. The project being that 100 recycled water bottles are turned into enough synthetic material to make 1 sweater. Parents and children alike learned and will continue to learn about recycling through our science curriculum. This year we will be planting trees and flowers at *both* school locations. Our science fair theme this year is about recycling/environment and conservation. In the past this fair has produced a "box" dinosaur that went from floor to ceiling and was over 10 feet long, an oceans project that demonstrated that clean oceans are important to the people of Illinois and impact us when they are not healthy and a marsh ecosystem where the kids learned all about balance and what happens when it is changed. All of these events have raised recycling awareness in our student homes, helped clean up and beautify Lombard for all to enjoy and demonstrates to our student body that they are part of a community and therefore are responsible for its well being. Last year we purchased new rakes, garden gloves and rubber mulch for around our building. We continue to use the picnic tables and garbage cans purchased the previous year.

Part 3 –c.

Our goal this year is to continue to educate our students and parents on the recycling/ environment and conservation issues. On the reverse side of this application please find a list of items being requested for grant funding.

Items requested by Chicagoland Academy

Barco's Recycled Products:

1. Triple Planter (2) , model# KP18T, 100% recycled plastic…$508 each……$1016
2. Single Planter (2), model #KP185, 100% recycled plastic…$188 ea……$376
3. Portable traffic safety signs, model#SFTYPST28E, SET OF 5, 50% Recycled Plastic……$150
4. Safety Signs, model# CNSGN (5 signs)……$90

Education Kits

Delta Education 1-800-442-5444

NOTE: The kits listed below are exclusive kits put together by Delta that meet our needs. Comparison quotes could not be found since these kits are unique to Delta.

1. Delta science module (pollution) complete kit, model# 556-738-6032…..$367
2. Life science curriculum module, model# 556-050-3352……$569.95
3. Amazing Animal Video Series (15 videos in set, Gr 1-3)……$149.25
4. All About Animals (3 videos in set, model#556222-2224, Gr 3-6)……$129.95
5. Eyewitness Earth Science Library, Gr 2-6, 556-024-9921……$159.90
6. Power of Science Ecology Kit, model# 555-162-4280……$52.95
7. Essential concepts in Science, book set, Gr 3-5, model# 556-110-5840….$539.85
8. Eyewitness Video series, Gr 3-6, model# 556-024-9921,……$336.70

Environment Incubators

NOTE: Three quotes provided below for like item.

Delta Education 1-800-442-5444

Large Incubator, model# 556-080-2587……$88.25
Egg Turner, model# 556-090-1163……$39.95
Chicken Feeder, model# 556-060-3790……$10.95

MCMurray Hatchery

Incubator Kit w/turner & feeder, model#2NCB……$292.15

Brinsea

Octagon 10 Incubator Kit w/out turner & feeder ……$159.00

Microscopes

NOTE: Three quotes provided below for like item.

Delta Education 1-800-442-5444

Microscope Model #556-050-3352……$279.90

Microscope World 1-800-942-0528

Microscope Model #126-LED ……$429.00

Schoolmasters Science 1-800-521-2832

Microscope Model #126-LED ……$330.00

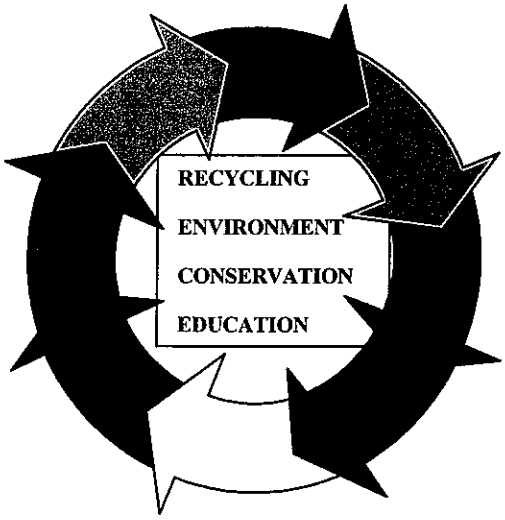
School Field Trip Transportation

Laidlaw Bus Co.

To Morton Arboretum ……$206.00
To Fullersburg Woods……$206.00

TOTAL GRANT REQUEST …… $ 5323.00

The purpose of the Village of Lombard's Solid Waste Recycling Grant Program is to promote recycling, the environment, conservation, and environmental education.



RECYCLE!

SOLID WASTE RECYCLING GRANT APPLICATION
Educational

Environmental Concerns Committee
Village of Lombard, IL
Trustee Tyler Williams - Chairperson

Grants for education can positively influence the overall health, welfare, and safety of the Village. As an example, trained and motivated students can begin new recycling or conservation programs, and influence others through their own efforts and publicity to be more environmentally conscious. These efforts will enhance the quality of life here in Lombard and globally.

The funding for Educational Grants this fiscal year totals $12,000 (June 1 through May 31). **The source of funds is the Community Recycling Fund, which receives revenue from the refuse surcharge.** The Village reserves the right to accept or reject any or all items in grant requests for any reason such as but not limited to fiscal constraints or minimal impact on recycling, the environment, or conservation. If all funds are not awarded during the various application rounds, the Village may reconsider grant applications previously received.

The grant program is open only to schools with students who live within the corporate limits of the Village of Lombard. Please note any park benches or similar items purchased must be made of recycled materials. **Applications will be accepted two times per year (no exceptions) with the following deadlines: March 1 and October 15.** All necessary information must be submitted with application. The Environmental Concerns Committee reviews grant applications at one meeting and makes recommendations at a following meeting. The Village Board then acts upon the recommendation. It takes about 10 weeks after the deadlines to award grants. Successful applicants may be requested to attend a later meeting.

Examples of grant eligible items include: environmental education presentations, books, videos, plants, worms, bus service for a field trip, microscopes, recycled plastic benches and picnic tables, all different types of recycling bins and containers, posters, water pollution test kits, bacteria pollution test kits, coliform kits, various CD's, magazines, project signs, seed and plant plugs, dissolved oxygen meters, shredders, composter, gardening supplies and scale, shovels, thermometers, storage sheds, pesticide detection kits, soil/pH meters, palm computers, probes, water quality kits, can crushers, nitrogen fixation kits, thermal and sewage lab kits, soil testing kits, soil texture and sedimentation unit, paper recycling lab, solar energy kit, water cycle model, landscape timber, acid rain kit, solar balloon, waste reduction kit, and floor puzzles. Items that are **not** grant eligible include but are not limited to: stipends, staff salaries, hauler fees, and ongoing expenses.

Please complete the following application and return to John Burg, Assistant Director of Public Works, at the Public Works Building, 1051 Hammerschmidt (mailing address is 255 E. Wilson Avenue, Lombard, IL 60148). Your application will be rated on a point system according to criteria in the application and compared to other grant applications. If you have any questions, please call Mr. Burg at 620-5765.

Applicants are required to submit a typewritten report responding to the questions below and providing a detailed description of items requested and costs. In your report, please number your responses based on the pertinent section of the application. Also, please fill in the blanks in the application to allow quick reference for evaluators. The Village may request additional information or documentation when reviewing the applications.

SOLID WASTE RECYCLING GRANT PROGRAM- EDUCATIONAL
Village of Lombard, Illinois

Application Form (Last revised 1-31-05)

Part 1 – GENERAL INFORMATION Today's date: **2/28/05**

Name Of School: **Manor Hill School**
Grant Contact Phone: (day) 630-827-4309 (evening) 630-7085241039

Address: 1464 South Main Street, Lombard, Illinois 60148

Number of students at school **320** Estimated number of students living in corporate limits of Village of Lombard **310**

Name/Title of Person Submitting Application: **Kathleen Fitzgerald, Principal, Manor Hill School**

Part 2 – EFFECTIVENESS OF CURRENT PROGRAM (recycling, environment, conservation)

a. Have you earned an "Earth Flag"? Yes __X No ____ If yes, list years 1999, 2002, 2003, 2004
b. Do you have an environmental club? **Yes X**____ No ____ If yes, how many are in the club and how long has the club been in existence? The club focus varies every year, but it has been in existence for over 10 years, and re-vitalized in the past five years to annually include from 25-90 students. Currently about 45 students are participating, in addition to the 60 other students in the Junior Garden Club.
c. How many students participate in recycling/environmental/conservation efforts? **300**
d. How many students are being taught about recycling/environment/conservation? **300**
e. How many students will the grant funds help to educate **320 plus many more in the community**.
f. How is the recycling/environmental/conservation program emphasized in your classes throughout the school? **The district has adopted a very strong curriculum in both science and social studies that includes study annually K-8 on re-use, renew, and recycle topics. The projects that the students are exposed to in the Discovery Center, along with the annual assembly with topics related to environment/conservation/recycling are promoted and supported by the PTA as well as the school program. Our Environmental Club has included students from grades 1-5 to promote age appropriate awareness and hands on activities that are on-going (recycling and composing) and that are integral to our school environment (planting and gardening care.)**
g. In your typed report, explain your current recycling/environmental/conservation program and past accomplishments. How long have you had a recycling/environmental/conservation program? What does the school do for the environment besides recycling? How has the school program helped people in the Village of Lombard? (see attachment below)

Attach typed explanation.

Part 3 – FINANCIAL COMMITMENT AND PROJECT DESCRIPTION

a. Has the school received grant money from the Village of Lombard? Yes X No ____
b. Amount of grant request? **Request One: $1500-400.00; Request Two: $1575.00 (or any portion therein.)**
c. Provide detailed description in report of items requested and costs. **If the grant involves commodity purchases, provide three quotes including companies and prices.** If recycled products are being purchased, list what percentage of products is made from recycled products.

Attach typed explanation. (See Below)

Attachment for part g above: Current Program and Past Accomplishments

The Manor Hill community is determined and purposeful in its commitment to conservation and recycling efforts to support a healthy and safe environment. It is a component that in integral to all decisions made at the school. We have had a conservation program intact for at least ten years, and have earned our Earth Flag for the past four of five years. We work closely with the Scare Staff, and plan assemblies, workshops, teacher staff development meetings, and recycling events with them, and with their inspiration and technical support. Several staff members at the primary and the intermediate have taken the lead in these areas, and have been willing to spearhead many of the events and initiatives. The PTA, and the entire school, work together in planning for a school environment where we learn how to live together in a healthy and safe place. Some of the most notable examples are:

- **The Manor Hill Playground that was planned for three years by the students, staff and parents had two prerequisites: accessibility and recycled products to the maximum extent possible.**
- **Annual events at the school including gym school, electronics, and printer cartridge recycling that are very successful.**
- **A partnership with the Lions Club begun this year to recycle keys, glasses, and hearing aids.**
- **Students have conserved in the lunchroom with practice in stacking and separation of all refuse, as well as an effort through lessons and reinforcements for "random" checks of students who use recycled storage containers for their lunches.**
- **On-going paper and cardboard recycling which is the responsibility of the fifth grade.**
- **Composting of waste from the lunchroom and use of the products in the gardens and in the planting projects within the classrooms.**
- **Outdoor classroom built with the help of the Village Recycling committee grant where students can learn to appreciate the environment we work to protect.**
- **The opening of the Discovery Center at Manor Hill which allows our students maximum exposure to and use of the many high tech activities that the facilitators have gathered and produced for student use.**
- **Continuous activities with the Scare staff to promote activities from paper making and materials expositions to lunchroom audits and clothes drives within the school.**
- **Promotion of recycle of used clothes within the school setting. Parents have closets to select from when they need specific seasonal clothing, and donate it back to the school when it is no longer needed and in good repair.**

Grant Proposal:

Manor Hill would like to continue with the project at the east side of the school surrounding the new playground that was completed last fall. The students, staff and community raised $187,000.00 to build the playground over three years. The cost of the playground was almost double and delayed two years because of the priorities of accessibility and use of recycled materials in the

equipment and in the surfacing. This year we would like to make the playground area that serves so many and so diverse a population in the community more comfortable for everyone's use. We hope to accomplish two things, both of which we propose as alternatives for you to consider:

Request One: There is little shade available on the playground area, and we would like to begin to build up some of the surface and plant shade trees to the west of the playground that faces Glenn Westlake Middle School. This would create a natural barrier between the older and younger students, and also provide the needed shade for the afternoon as the proposed trees grow. Naturally, this would be a phased project, but we would like to begin with five trees.

We have not completed consultation with specialists as to the ideal trees for this area, and consequently do not have three complete bids to offer to the committee. However, I have received some relatively reliable "wholesale" estimates on the materials needed from Matthies Landscaping in Glen Ellyn. The estimate would be approximately 266 cubic feet of fill and soil at about $4000.00 plus the cost of 5 trees with 3 inch diameters that would be from 10 to 15 feet tall at approximately $300.00 each. This would be $1500.00. We request that your committee consider a part or whole of either portion of the materials request. The school district would be responsible for the installation and upkeep of the new area.

Request Two: The playground is a gathering spot for the many families who spend time with their children apart from school hours, as well as for all of the families of Manor Hill School. This playground is specially designed for, and attracts many, handicapped students from the surrounding neighborhoods. We would like to provide seating facing the playground for the use of the parents and youngsters who are watching others in their play and learning. Naturally, we will continue to exclusively consider recycled materials, so we have found some reasonably priced benches and will attach to this document. The cost for the benches is $325.00 each, and we will be requesting 5 of these for a total cost of $1575.00 plus shipping. We may, as in the past, be able to negotiate no shipping charges. We would be requesting all or part of this as an alternative to the above request.

Thank you for any consideration that you give to Manor Hill, and as always I invite you to visit us to see the great things that you have helped us to accomplish!

Sincerely,

Kathleen Fitzgerald, Principal, Manor Hill

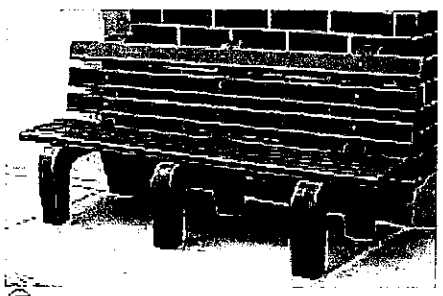
Barco Products, Incorporated

Home >> Benches & Chairs >> Recycled Plastic

Recycled Plastic

Standard Bench

- Durable, maintenance-free recycled plastic
- Safe in any weather, year 'round
- Solid color throughout



Enlarge

Available Colors

fading Brown Cedar Gray

- 100% recycled plastic

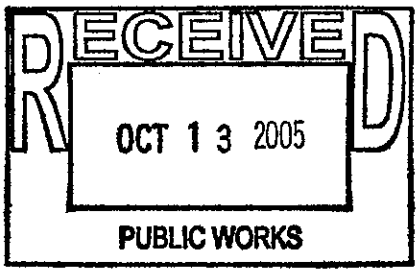
Qty	Color	Model #	Dimensions	Weight	Price
	- Specify -	02EG1005	72" l x 14" w x 30.25" h 14" w x 17" h seat	155 lbs	$325.00 ea + shipping

I will attach a picture of the new playground as we celebrate this!

40 YEARS
A Lasallian Tradition Since 1966

MONTINI CATHOLIC HIGH SCHOOL

19 W 070 16th Street—Lombard, Illinois 60148-4797
Telephone: Main Office 630.627.6930—Fax: Main Office 630.627.0537—info@montini.org



October 12, 2005

Mr. John Burg
Assistant Director of Public Works
Village of Lombard
255 E. Wilson Avenue
Lombard, IL 60148

Dear Mr. Burg,

Enclosed with this cover letter is an application from Montini Catholic High School for the Solid Waste Recycling Grant Application. Montini Catholic is respectfully requesting your consideration for the purchase of Digital Stereomicroscopes for our Environmental Science Program.

Montini Catholic High School is a college preparatory co-ed school that is owned and operated by the De La Salle Christian Brothers. This year we celebrate our 40th year of providing a Lasallian Education to residence of Lombard and surrounding communities. The 680 students attending our school come from diverse academic and social backgrounds and participate in a curriculum that provides a well-rounded education that also stresses service to community and to fellow students. 98% of our students go on to higher education.

Thank you in advance for your consideration of this proposal. Please contact me at 630.627.6930 ext. 22 if additional information is needed.

Sincerely,

James F. Segredo
President

SOLID WASTE RECYCLING GRANT PROGRAM- EDUCATIONAL
Village of Lombard, Illinois

Application Form (Last revised 1-31-05)

Part 1 – GENERAL INFORMATION Today's date: 10/12/2005

Name Of School: Montini Catholic High School Grant Contact Phone: (day) 630.627.6930 (evening) 630.918.3656

Address: 19W070 16th Street, Lombard, IL 60148

Number of students at school 680 Estimated number of students living in corporate limits of Village of Lombard 153

Name/Title of Person Submitting Application: Jim Segredo, President or
Virginia Carroll, Chairperson-Science Department

Part 2 – EFFECTIVENESS OF CURRENT PROGRAM (recycling, environment, conservation)

a. Have you earned an "Earth Flag"? Yes X No ____ If yes, list years 1993 + 2000
b. Do you have an environmental club? Yes X No ____ If yes, how many are in the club and how long has the club been in existence? Sixty members. Established 1990
c. How many students participate in recycling/environmental/conservation efforts? 350
d. How many students are being taught about recycling/environment/conservation? Over 200
e. How many students will the grant funds help to educate? Thirty percent
f. How is the recycling/environmental/conservation program emphasized in your classes throughout the school?
g. In your typed report, explain your current recycling/environmental/conservation program and past accomplishments. How long have you had a recycling/environmental/conservation program? What does the school do for the environment besides recycling? How has the school program helped people in the Village of Lombard?

Attach typed explanation.

Part 3 – FINANCIAL COMMITMENT AND PROJECT DESCRIPTION

a. Has the school received grant money from the Village of Lombard? Yes X No ____
b. Amount of grant request? $2,500
c. Provide detailed description in report of items requested and costs. **If the grant involves commodity purchases, provide three quotes including companies and prices.** If recycled products are being purchased, list what percentage of products is made from recycled products.

Attach typed explanation.

SOLID WASTE RECYCLING GRANT PROGRAM

Part 2 – EFFECTIVENESS OF CURRENT PROGRAM (recycling, environment, conservation)

f. How is recycling/environmental/conservation program emphasized in your classes throughout the school?

The environmental and conservation program emphasis begins at the freshmen level. Most of our 170 freshmen class members are enrolled in the Environmental Science class. This course is the introduction of science at Montini Catholic High School. The course is an overview of all the sciences emphasizing the interrelationship of organisms to environment. The honors students at the freshmen level and sophomores are enrolled in Biology. This course examines environmental issues first at the cellular level. The web of life starts with plants and animals at this stage. The production of oxygen through ocean plankton and the beginning of the food chain are examined in the first semester. In Chemistry, lessons on acid rain, water and air pollution are a part of the curriculum. Energy production and conservation is included in both the Chemistry and Physics courses, with Physics emphasizing energy alternatives. Earth Science examines the production of soil, as well as Weather changes on the global scale. The unit on Oceanography includes the effect of oceans on weather and shorelines. All areas of pollution are covered in the three years required for graduations. Further several of the classes have internet projects that incorporate ideas of improvements in environmental areas. In all classrooms recycle bins and Teacher support aids the Environmental club who bi-weekly collect the bins.

g. Explain your current recycling/environmental/conservation program and past accomplishments. How long have you had a recycling/environmental/conservation program? What does the school do for the environment besides recycling? How has the school program helped the Village of Lombard?

Currently the Environmental Club has members in all four levels of students. While the entire year they collect recycling bins from every classroom, they also have worked to beautify the school grounds. Their landscaping work is in the center of the school's courtyard and is passed by the students each day entering and leaving the school. Students from the Club joined others in the Lombard area, for a number of years and have worked in the Lombard Recycling Center. At the end of the school year, students collect used books and workbooks. The used books were sent to the missions or were sent to a recycling plant and the workbook pages that were not used during the school year, were removed and recycled. A ton of would be garbage became recycled. The real impact though comes from the message sent to all students and faculty and that is the importance of reducing our wastes and reusing materials instead of just throwing it away. Since the school uses the same recycle bins that the Village of Lombard uses, you reinforce the message. Each week residence of Lombard put out their recycle bins and the idea of recycling isn't just "the school's thing" but is the Right Thing. While the school has recycled since the 1980s, the environmental Club was organized in 1990.

Part 3 – FINANCIAL COMMITMENT AND PROJECT DESCRIPTION

c. Project Description

This grant request purchase centered in one area.

The Digital Stereomicroscope is used for examining living things. Interactions with environmental changes can be viewed in real time. Among the variables are air temperature, water temperature, pollutants, excess use of fertilizers, population growth, and the introduction of noon native plants. In a short period of time, students will be able to see visually all of the small alterations to the environment.

Vendors and price quotes.

VENDORS AND PRICE QUOTES FOR DIGITAL STEREOMICROSCOPES

1ST VENDOR

Fisher Scientific
Fisher Science Education
(800) 955-1177
4500 Turnberry Drive
Hanover Park, IL 60133
https://www1.fishersci.com
Item #12-562-15
Cost: $598.90
Quantity: (4)
Total: $2,395.60 + shipping*

2ND VENDOR

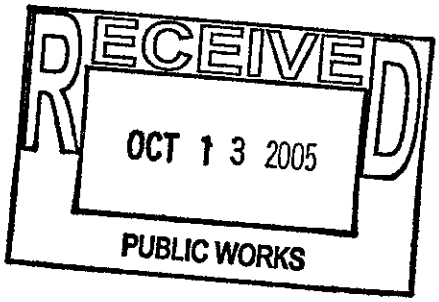
Ward's Natural Science
(800) 962-2660
P.O. Box 92912
Rochester, NY 14692
http://www.wardsci.com
Item #24 V 0512
Cost: $595.00
Quantity: (4)
Total: $2,380.00 + shipping*

3RD VENDOR

Sargent-Welch
P.O. Box 5229
Buffalo Grove, IL 60089
(800) 727-4368
http://sargentwelch.com
Item #WLS47750
Cost: $817.79
Quantity: (4)
Total: $3,271.76 + shipping*

*Shipping is estimated at $165.

Solid Waste Recycling Grant Program-Educational



Part 1- General Information 10/10/05

Name of School: Willowbrook High School

Grant contact phone (day): 630-530-3966
Grant contact phone (night): 630-629-1583

Address: 1250 S. Ardmore Ave. Villa Park Il 60181

Number of students at school: 2202

Estimated number living in corporate limits of Village of Lombard: 681

Name of person submitting the application: Justine Bryers

Part 2- Effectiveness of current program

a. Have you Earned an "Earth Flag" – Yes in 1990 and again in 2005
b. Do you have an environmental club? Yes, about 25 students are in the club that started in 1988.
c. How many students participate in recycling/environmental/conservation efforts? 2200 students, we recycle paper in every classroom, so every student is involved in recycling. The special education students collect the recycling bins weekly as part of their curriculum.
d. How many students are being taught about recycling/environment/conservation efforts? 536 freshmen. Every freshman taking biology learns about ecology and environmental issues for the first quarter of the year. 70 students are currently enrolled in environmental science. A yearlong science elective in which environmental topics are more deeply investigated.
e. How many students will the grant fund help to educate? There are currently 70 students enrolled in environmental science. The items asked for in the grant can be used year after year affecting more

students as time goes by. The items can also be used by other science classes during ecology units potentially the whole freshman class.

f. How is the recycling/environmental/conservation program emphasized in your classes throughout the school? Every classroom recycles paper products and students are encouraged not to waste paper and other materials. Resource conservation is discussed in social students classes as well as science courses. A display cabinet that the environmental club keeps up educated students on recycling and conservation.

g. Explain program and past accomplishment.

Currently Willowbrook recycles paper products and strives to reduce the amount of resources used. Teachers are encouraged to use both sides of the paper when making copies. Scrap paper is made into teacher note pads and handed out to the teachers in the beginning of the year to use instead of throwing those scraps away. Willowbrook's recycling program started 17 years ago with the birth of Students for a Better Environment, which promoted recycling and conservation throughout the school.

Besides recycling and reducing our waste- the school has sent volunteers to work at events including Lombard's Recycling Extravaganza, and Wheaton's Recycling Event. Students for a Better Environment have collected gym shoes for Nike's reuse a shoe program and have competed in the Illinois Envirothon where the Willowbrook team won first place in DuPage county at last years event. The students of Willowbrook generously donated unwanted or used crayons to be melted down and reformed into large crayons for students with special needs to use. Willowbrook's bookstore has donated gently used books to Book Rescue operations to send to needy students. The environmental club worked to stencil "Do not dump-Goes to Stream" on storm drains in Villa Park and passed out door hangers with information about illegal dumping to residents of Villa Park. Also the Cleaning of the brook that crosses the school property has been the responsibility of the students.

Students for a Better Environment continue to learn about conservation outside the class by attending workshops by the national conservation society, visiting Brookfield Zoo and learning about endangered species and animal conservation, visiting the Morton Arboretum to learn about tree conservation and having special guest speakers to discuss environmental topics.

By promoting recycling and conservation efforts in the school it is hoped that the students that live within the Village of Lombard will practice

recycling and conservation efforts at home. In participating in Lombard's Recycling Extravaganza, the students aided the people of Lombard directly by helping them to unload books, lumber or scrap metal. We hope to continue to find way to reach out to the people of Lombard and to aid in environmental causes.

Part 3 Financial commitment and project description

a. Has the school received grant money from the Village of Lombard? No
b. Amount of grant requested? $ 3355.30
c. Description of costs:

In order to utilize the incredible resource of the brook that runs through the school property several water related items are needed. We would like to take information about the brook through out the year and compare results within the year and eventually over the years. As a class the students can determine possible sources of pollutants and brainstorm and implement ideas that can solve the problems and educate the school and perhaps residents about the brook.

Water kit (1)

Kit included tests for pH, nitrate, phosphate, dissolved oxygen alkalinity, turbidity, and temperature. This can be shared among the students to test various points on the brook and different times of the year. Because we will also be collecting macro and micro invertebrates we will be able to see a correlation between water quality and species diversity.

Aquatic dip nets (12)

In order to collect larger organisms from the brook it is necessary to have nets. We hope to look at the type of species and the diversity of species to determine the quality of the water.

Plankton nets (12)

In order to investigate microscopic aquatic life it is necessary to have fine nets with collecting vials. They are ideal for transferring the organisms to view indoors and to identify.

Stereomicroscopes (5)

These microscopes are ideal for studying the macro invertebrates that are captured in the brook. Understanding the life cycle and type of organisms will aid students in making conclusions about the quality of the brook.

Itemized List:

Flinn AP5287 Water quality educator and Monitoring outfit	$350.00
Flinn FB0020 (12) Aquatic dip nets $38.75 Ea	$465.00
Fisher AJ568119 (12) Plankton Nets $86.70 Ea	$1040.40
Flinn MS5020 (5) Stereomicroscopes $299.90 Ea	$1499.90
Total:	$3355.53

Environmental—Water Kits, Advanced, continued

Water Quality Educator and Monitoring Outfit

LaMotte Water Quality Monitoring Outfit—Complete modular program for testing the quality of your water! Individual test kit modules for common water testing factors—pH, nitrate, phosphate, dissolved oxygen, alkalinity, turbidity, and temperature—are conveniently housed in a rugged, waterproof carrying case with metal hinges and a latch. Each modular kit comes supplied in its own compact storage/carrying case with pre-calibrated test tubes, lab ware, and all necessary reagents to give fast, precise results. Easy-to-follow testing instructions are included with each kit. Use of hazardous testing materials has been reduced or eliminated to ensure safety. Economical reagent refill packages are available for all modules.

LaMotte Water Quality Educator and Monitoring Outfit—Includes all materials in the monitoring outfit described above, plus *The Monitor's Handbook* and CD-ROM. Together the 72-page handbook and CD contain all necessary information you need to set up a first-class water quality monitoring program and interpret test results. The CD runs on any Macintosh® II computer with a CD-ROM drive. Incorporates Quick Time™ animations, still photos, written and audio information to provide step-by-step instructions for test factors listed.

Catalog No.	Description	Price/Each
AP5287	Water Quality Educator and Monitoring Outfit	$350.00
AP5288	Water Quality Monitoring Outfit	325.50

Test Factor	Range	Number of Tests	Refill Kit No.
Alkalinity, total	0–200 ppm	50	AP5009
Dissolved Oxygen	0–10.0 ppm	50	FB0644
Nitrate-Nitrogen	0–15 ppm	50	AP5025
pH	3.0–10.5	100	AP5029
Phosphate	0–2.0 ppm	50	FB0775
Temperature	–5 to 45 °C	N/A	N/A
Turbidity	0–200 JTU	50	AP5037

Water Quality Educator and Monitoring Outfit
AP5287, etc.

Contact Us Via E-mail
flinn@flinnsci.com

Environmental—Water Kits, Pollution

Bacterial Pollution (Coliform) Kit

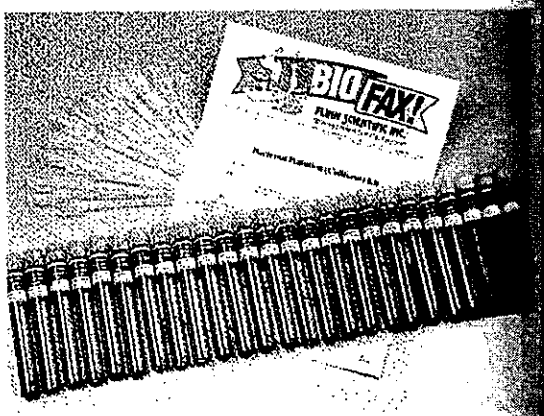
FLINN EXCLUSIVE QUALITY

By: The Flinn Staff

Students will determine the presence or absence of coliform bacteria (indicative of the presence of untreated sewage and potentially pathogenic bacteria) in water supplies. By observing a dramatic color change that occurs in a lactose broth medium, students will determine whether or not coliforms are present. Kit includes 25 tubes of lactose broth medium with chlorphenol red indicator, sterile transfer pipets, and instructions.

Materials supplied for 25 students working individually.

Catalog No.	Description	Price/Each
AB1152	Bacterial Pollution (Coliform) Kit	$44.50



Bacterial Pollution (Coliform) Kit
AB1152

Chemical Pollution in Water—A Qualitative Ion Test Kit

FLINN EXCLUSIVE QUALITY

By: The Flinn Staff

Water is an essential resource to humans. When trace amounts of certain chemicals enter our water supply, serious health problems may occur. In this activity, students will test for the presence of several types of simulated polluting chemical ions including chlorides, chromates, iron, lead, mercury, phosphates and sulfates. Students will also write chemical equations and test for unknown contaminating ions. Kit includes a detailed background section on sources and effects of water pollution, reproducible student data handouts, complete teacher notes with sample data and answers, and enough chemicals needed to perform 300 tests for each ion. Fifteen reusable 24-well reaction plates are recommended and may be purchased separately.

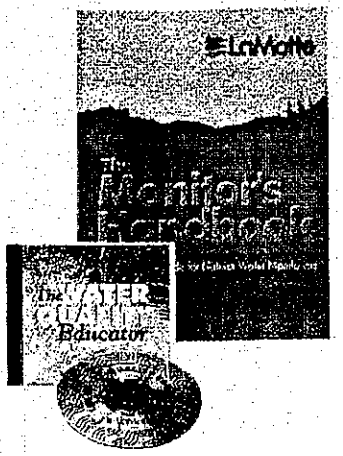
Super Value Kit: *Complete for 5 classes of 30 students working in pairs.*

Catalog No.	Description	Price/Each
AP5905	Chemical Pollution in Water Kit	$64.91
AP1447	Reaction Plates, 24-well	2.95

Chemical Pollution in Water—A Qualitative Ion Test
AP5905

ENVIRONMENTAL—WATER KITS, POLLUTION continued on next page.

Water Test Outfit



LaMotte® Water Quality Educator and Monitoring Outfit

CD-ROM Guides Students Through Test Procedures

Students first work with the CD to learn how to conduct the seven included water quality test procedures such as nitrate, dissolved oxygen, pH, phosphate, total alkalinity, turbidity, and temperature. Then they can put what they've learned into practice with the individual test kits. A CD-ROM for Mac and Windows, handbook, test kit modules, reagents for fifty tests, and instructions are all included in a sturdy plastic case. Size: 15"L x 15"W x 7"H. Weight: 15 lbs., 4 oz.

21 W 0008 **350.00**

LaMotte® Marine Science Outfit

Our Most Comprehensive Saltwater Testing Outfit

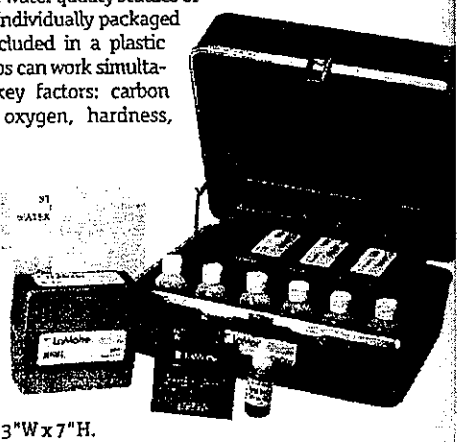
Featuring the same versatility as the Limnology Outfit, but for ocean water, bays, marine estuaries, and salt marshes. The six factors that can be tested are alkalinity, carbon dioxide, dissolved oxygen, hardness, pH, and salinity. The outfit includes enough materials for fifty tests each, five water sampling bottles, and handbooks all packed in a waterproof case. Size: 14"L x 13"W x 7"D.

21 W 0030 **360.00**
21 W 0031 Refill Kit **120.80**

LaMotte® Limnology Outfit

A Portable Outfit for On-Site Testing of Seven Crucial Factors

This kit allows on-site water quality studies of any freshwater site. Individually packaged test modules are included in a plastic case, so several groups can work simultaneously on seven key factors: carbon dioxide, dissolved oxygen, hardness, nitrate, pH, phosphate and silica. It includes sampling bottles, three reference handbooks, and enough materials for fifty tests for each factor but nitrate, which only includes forty tests. Size of case: 14"L x 13"W x 7"H.



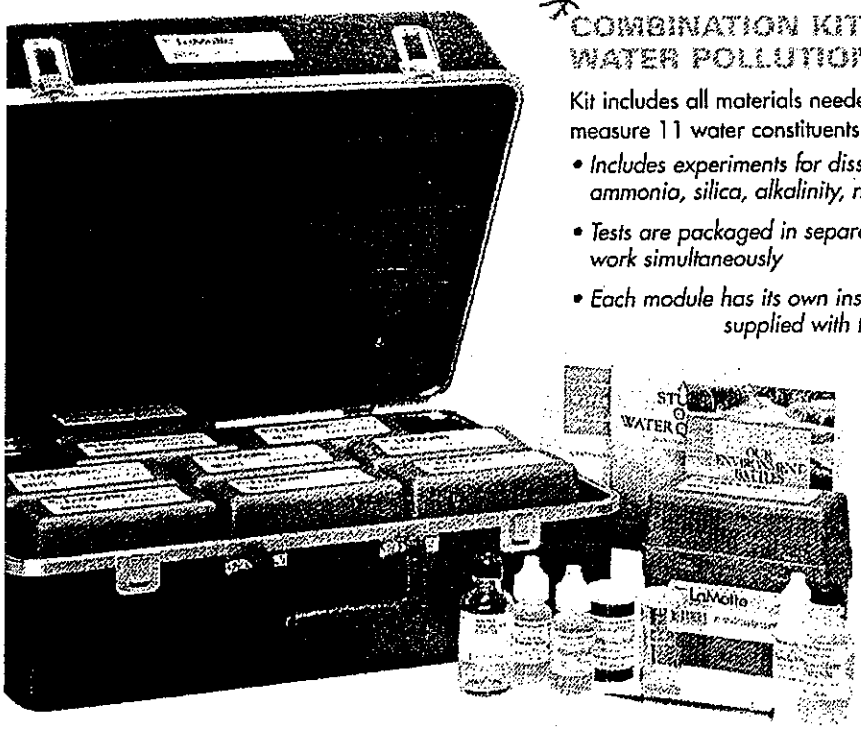
21 W 0020 **360.00**
21 W 0021 Refill Kit **116.00**

LaMotte® Introductory Water Pollution Outfit

Clear Reaction Chambers Allow Demonstration on Overhead Projectors.

Use this kit both indoors and out. First, teach proper techniques outside the lab with test procedures for sixteen water quality factors: alkalinity, ammonia, carbon dioxide, chloride, chlorine, chromium, copper, cyanide, dissolved solids, hardness, iron, nitrate, pH, phosphate, salinity, and sulfide. Then, reinforce what they've learned with overhead demonstrations that permit clear projection of colorful test reactions. The outfit comes with all equipment, two water handbooks, and enough materials for thirty tests per factor. Case size: 14"L x 12"W x 7"D. *Note: Contains barium chloride and nitric acid.*

21 W 0010 **414.95**
21 W 0011 Refill Kit **220.45**



COMBINATION KITS FOR QUANTITATIVE WATER POLLUTION STUDIES

Kit includes all materials needed to perform onsite, quantitative tests to measure 11 water constituents and assess water purity.

- *Includes experiments for dissolved oxygen, phosphates, dissolved CO_2, ammonia, silica, alkalinity, nitrates, pH, chlorides, sulfides, and hardness*
- *Tests are packaged in separate modules, so several teams of students can work simultaneously*
- *Each module has its own instruction sheet, plus an instruction manual supplied with the outfit*
- *Also includes the texts,* Our Environment Battles Water Pollution *and* Investigating Water Problems, *for reference on water pollution and testing*
- *Rugged carrying case conveniently stores kit contents*

Combination Outfit	AJS45075D	499.95
Refill Unit	AJS45075E	229.95

ESTIGATING WATER LUTANTS AND ER ANALYSIS

se safe, easy-to-use chemical tests t strips to learn the basics of ollution by analyzing local water s.

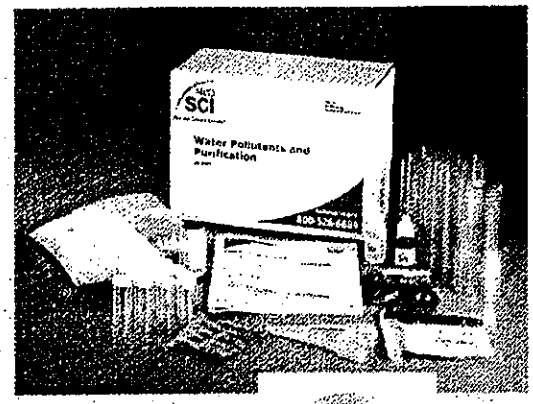
for a variety of common pollu- including total and free chlorine, hardness, total alkalinity, and pH

ntifies the concentration of pollu- to determine the potential danger

des teacher and student guides

size: 40 students

32671 **66.95**

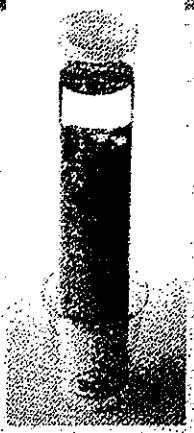


WATER POLLUTANTS AND PURIFICATION LAB

Help your class to learn about water pollution and purification through a series of activities investigating drinking water.

- *Explore various sources of water pollution*
- *Discover the means to prevent contamination and to repurify water*
- *Learn about water treatment, the water cycle, porosity and permeability, and groundwater*
- *Class size: 40 students*

AJS32672 **59.95**



Fisher

Microscopes, Flinn Economy Choice, continued

High School Stereoscopes

Precision optics transmit a clear, three-dimensional upright image suited to the greater demands of the high school. For fine dissection work, larger specimens, or minerals and other opaque objects these instruments offer the versatility and durability you expect.

Features include:

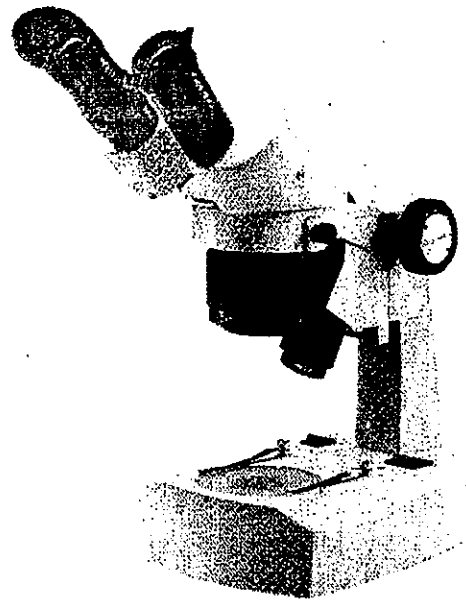
- Paired, widefield 10X eyepieces with diopter adjustment.
- 45° inclined head rotates 360° and locks in place.
- Paired objectives are parfocal, parcentered, and achromatic.
- Heavy-duty rack and pinion focusing with damage-preventing slip clutch and tension adjustment.
- Two 80 mm stage plates—frosted glass and reversible black/white.
- Four-position light switch: incidental (top) only, transmitted (bottom) only, top/bottom combined, and off.
- Locked-on tamperproof stage clips.
- Rugged cast metal frame with chemical-resistant gray enamel finish.
- Vinyl dust cover provided.
- Limited lifetime warranty.

Available with standard (incandescent) or fluorescent illumination:

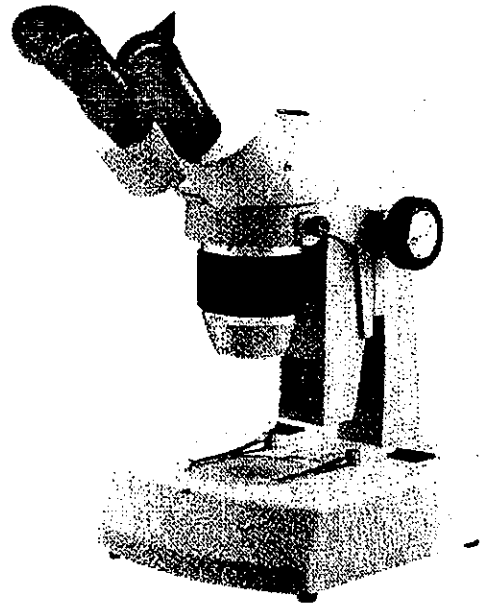
Standard Illumination: High intensity 12V, 10-watt bulb for incidental (top) light; 110V, 15-watt bulb for transmitted (bottom) light. More than ample lighting intensity so that accessory illumination will not be required.

Fluorescent Illumination: Cool, long lasting and efficient fluorescent bulbs top and bottom. 115V, 5-watt bulbs produce very little heat and outlast conventional bulbs by up to 10 times. They produce a bright, white light that does not distort or mute natural coloration of objects viewed.

Catalog No.	Description	Objectives (Magnification)	Price/Each	Price/Each 5 or More
MS5020	High School Stereoscope, Flinn Economy Choice, Standard Illumination	1X, 3X (10X, 30X)	$319.00	$299.90
MS5025		2X, 4X (20X, 40X)	319.00	299.90
MS5030	High School Stereoscope, Flinn Economy Choice, Fluorescent Illumination	1X, 3X (10X, 30X)	369.00	346.85
MS5035		2X, 4X (20X, 40X)	369.00	346.85



High School Stereoscopes, Flinn Economy Choice, Standard Illumination MS5020, etc.



High School Stereoscopes, Flinn Economy Choice, Fluorescent Illumination MS5030, etc.

High School Stereoscope Accessories

Catalog No.	Description	Price/Each
MS6029	Eyepieces, Widefield 10X, 2/Pkg.	$78.00
MS6007	Bulb, Fluorescent, 5-watt	8.00
MS6030	Bulb, 12V, 10-watt (Top)	3.90
MS6031	Bulb, 110V, 15-watt (Bottom)	4.50

How To

Set Up and Adjust Stereoscopes

- Place the specimen on the stage, roughly centering the area of interest under the objective.
- Lower the objective housing until it is as close to the specimen as possible and, looking through the eyepieces, bring the specimen into rough focus.
- Stereoscopes typically have what is called a diopter/focus adjustment built into the left eyetube. This adjustment is used to tailor the optical system to the individual user. To set, close the left eye and rotate the focus controls to obtain a sharp image. Close the right eye and, using the left eye only, adjust the diopter ring until the image is in sharp focus. With both eyes open the image should now be in sharp, equal focus.
- The interpupilary distance is adjusted by either moving the eyetubes together, or moving them apart. If two separate fields appear, the eyetubes are too far apart; if two overlapping fields appear, the eyetubes are too close together. Adjust spread until a single, non-overlapping field is seen.

FISHER SCIENCE EDUCATION INTERMEDIATE 1000 SERIES STEREOMICROSCOPES

Dual-magnification stereomicroscopes with two pairs of objectives for viewing three-dimensional objects. Choice of illuminations: Dual Tungsten, Dual Fluorescent, or cordless LED illumination. Safety and durability features protect the microscope for years of use. Available with standard inclined binocular head or USB/Analog binocular head with outputs to connect to video monitor or your computer—perfect for teaching applications.

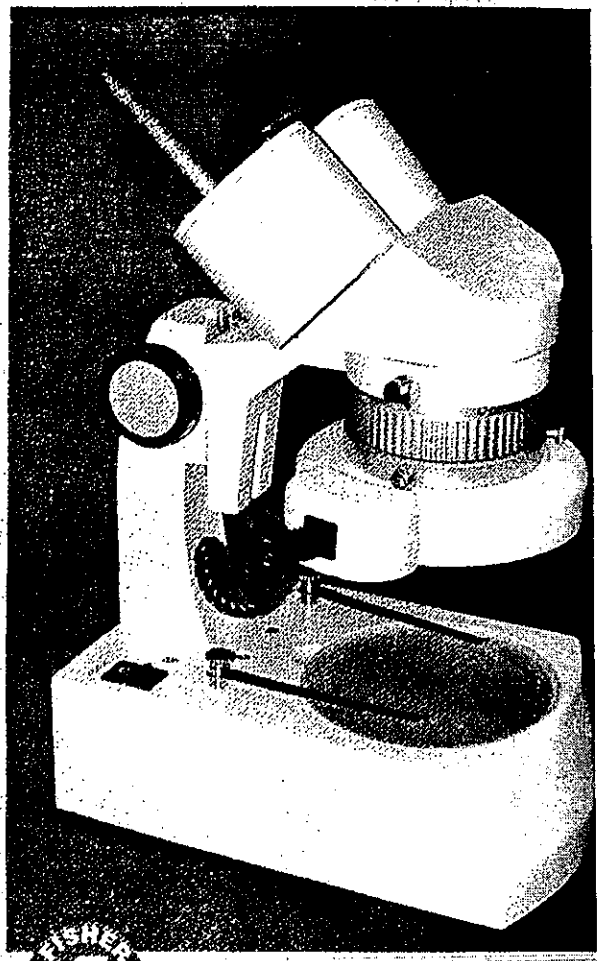
General features and specifications:

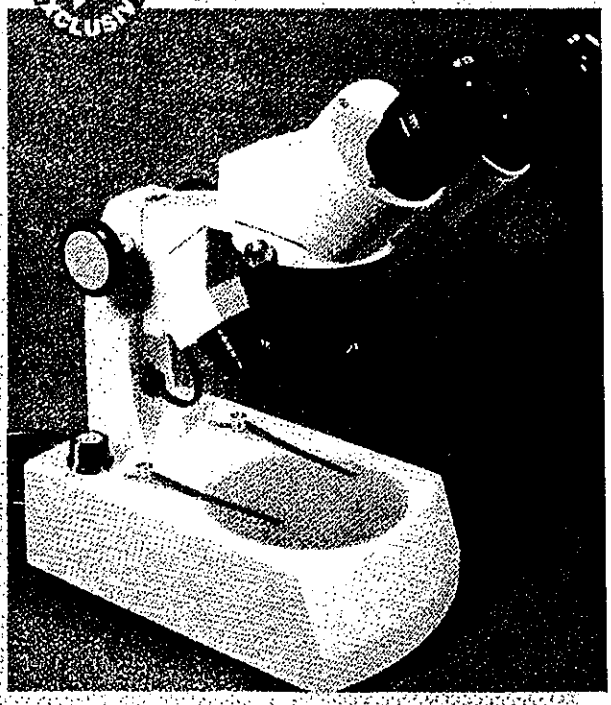
- *Binocular head with 45° viewing angle for maximum comfort*
- *Locked-in eyepieces*
- *High- and low-power objective pairs for viewing versatility*
- *Versatile three-way system provides the option to light from above, below, or both*
- *Stage with removable frosted stage plate, and reversible black/white stage plate*
- *Locked-on stage clips*
- *Slip clutch*
- *Dual-focusing controls increase usability for both left and right handed users*
- *Rugged metal construction*
- *CSA certified electrical cord*
- *Five-year warranty*

USB/Analog model features and specifications:

- *Binocular head with built-in live analog camera*
- *USB output allows easy connection to computer*
- *Capture, annotate, and store images in .jpg or .bmp graphics format*
- *Analog output allows connection to external video monitor or video projector*

Head Configuration	Objectives	Cat. No.	Price
Dual Tungsten			
Binocular	1X, 2X	AJS90014	319.00
Binocular	1X, 3X	AJS90014B	319.00
Binocular	2X, 4X	AJS90014E	325.00
Dual Fluorescent			
Binocular	1X, 2X	AJS90014A	366.00
Binocular	1X, 3X	AJS90014C	366.00
Binocular	2X, 4X	AJS90014F	366.00
USB/Analog	2X, 4X	AJS90014G	1249.00
LED			
Binocular	1X, 3X	AJS90014D	515.00
Binocular	2X, 4X	AJS90014H	515.00





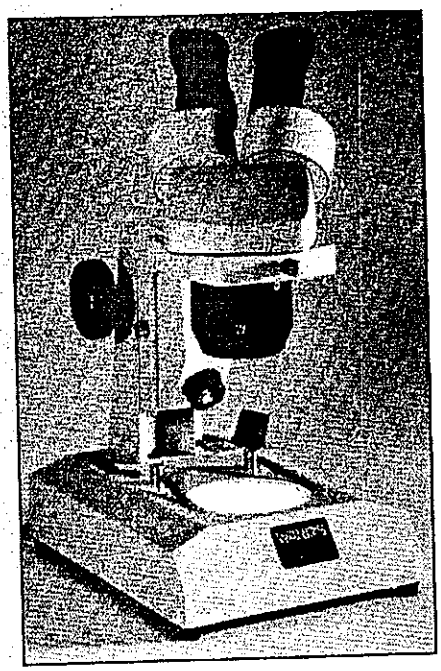
VIDEO FLEX COMPATIBLE

See Pages 651-656

Student Stereomicroscopes

dent Stereomicroscope

gned for Comfort, Even When Used Over Long Periods of Time



r students spend large amounts of time in the lab, they need a stereomicroscope that affords viewing com- uced eyestrain, and most of all a sharp, clear image of the specimen. WARD'S Student Stereomicroscopes nd exceed these requirements, and will provide years of service in your lab. Advanced optics deliver preci- agnification and a clear image, with a diopter control in one eyepiece and adjustable interpupillary distance vide a custom fit for each viewer. The easily reversible head adapts to varied viewing requirements and the ion rack and pinion focusing is protected by a slip clutch system that prevents damage to optics and gears. ectives are housed in a smoothly rotating turret and are parfocal for quick changes in magnification . It also features a removable frosted glass stage plate and reversible black/white stage plate for contrast. It with *WARD'S Microscope Manual*, rubber eyeshields, and dust cover. 110 VAC with a 5' 6" cord.

tures:
l size: adjustable height, 12 ½–15", with 6 ¼"L x 8 ½"W base
ined binocular head
ed 10X widefield eyepieces with diopter control in one
al magnification: 1X and 2X objectives for 10X and 20X magnification or 2X and 4X for 20X and 40X magnification
ge plate: 3" dia., with clips
lt-in 20 W halogen for reflected light, 20 W tungsten for transmitted light
ee-way illumination control to select reflected light, transmitted light, or both

W 2600	With 1X and 2X Objectives	395.00
W 2601	With 2X and 4X Objectives	395.00

gsten Replacement Bulb

W 0282	20 W, 110 V	7.95

ogen Replacement Bulb

W 6083	20 W, 6 V	14.95

dent Stereomicroscope — Fluorescent Illumination

e the option of the same high-quality Student Stereomicroscope but with built-in fluorescent illumination that won't harm ers, even over extended periods of time. It comes with 5 W fluorescent illumination for transmitted light and 20 W halo- r reflected light, as well as 1X and 3X objectives for 10X and 30X magnification.

W 2605		459.00

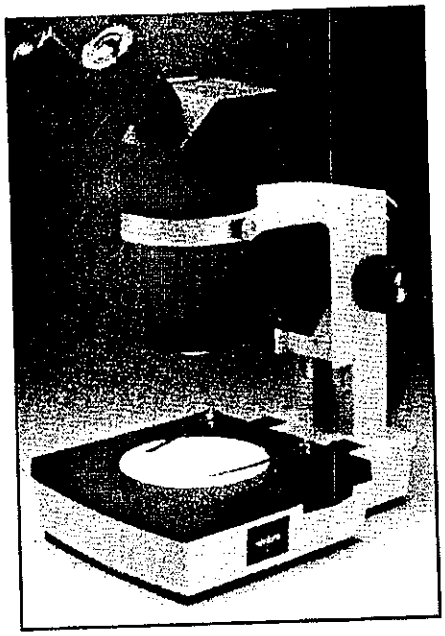
rescent Replacement Bulb

W 0286	5 W	9.99

Advanced Stereomicroscopes

ift SM90-HF Advanced Stereomicroscope

stable Reflected Light Angle



eparate on/off switches allow for individual control of cool Ultra-Lite fluorescent transmitted light and cted halogen light. The reflected halogen light also has a dimmer control and adjustable light angle for precise ing needs. This microscope also features a 360° rotatable head for viewing from any angle, diopter adjustment e left eyetube for custom eye focus, locked-on eyepieces with eye guards for comfortable viewing by eyeglass ers, interpupillary adjustment, a slip clutch to protect optics and gears, a fixed stage plate, and a hanger in the to wrap the power cord on. The objectives are housed in a smoothly rotating turret for easy magnification ges. The microscope comes with a c-wrench, manual, and dust cover. 110 VAC with a 5' 5" three-wire cord.

tures:
l size: 14"H with 10 ½"L x 6 ¼"W base
ined binocular head
ed 10X widefield eyepieces with diopter adjustment in one
al magnification: 1X and 2X objectives for 10X and 20X magnification, or 2X and 4X objectives for 20X and 40X magnification
ge plate: 3 ½" dia., with clips
lt-in 5 W fluorescent for transmitted light, 20 W halogen for reflected light
ee-way illumination control to select reflected light, transmitted light, or both. In-base variable intensity control for lected light.

W 6071	1X and 2X Objectives	599.00
W 6072	2X and 4X Objectives	599.00

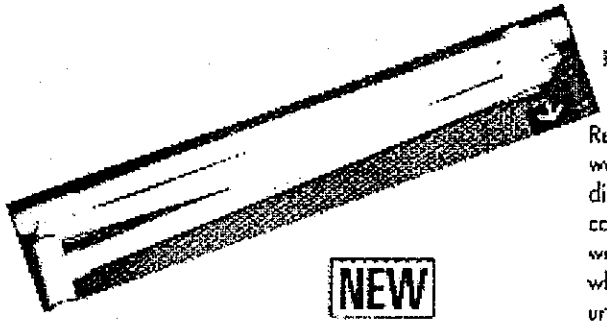
orescent Replacement Bulb

W 6081	5 W	8.90

logen Replacement Bulb

W 6083	20 W, 6 V	14.95

WARDS



NEW

SAMPLING SQUARES

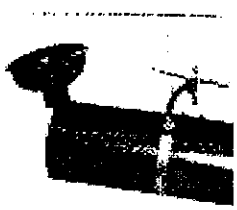
Easily quantify the results of high school field studies with these folding sampling squares. Lightweight, plastic device cleanly and quickly marks off either one quarter of a meter squared (0.25m²) or one meter squared (1.0m²). When unfolded, it pops into place using a durable shock cord inside the PVC pipe legs. T-connectors allow the frame to sink for use in water studies.

- *Four PVC legs connected with two PVC T-connectors*
- *Shock cord contained inside the pipe legs*
- *Instructions*

Quarter Square	AJS68344	34.95
Meter Square	AJS68345	79.95

FIELDMASTER® BASIC WATER SAMPLER

NEW



Real equipment for the real world—just the ticket for budding ecologists! This economical, all-purpose, horizontal water sampler can be used wherever you need a measured amount of sampled water for chemical or plankton analysis.

- *Easy to use, so your can involve your entire class. Innovative trip mechanism uses no messenger—just jerk the line sharply to close. Note: Trip is designed to work best in water—it's not likely to close on land*
- *Soft rubber seals won't pinch fingers or cause injury of any type*
- *PVC water bottle is virtually unbreakable, which means that samples can be taken just about anywhere—from a boat, off a pier, from shore, or even from a high bridge*
- *Includes 20m of braided polyest good for just about any sampling tion. Line is on a lightweight foa winding float that will bob to the face if it falls into the water*
- *Braided polyester line has less st than nylon and more wear than lines, making it a perfect choice dents. Stretches less than 5% and remains strong even if it frays*

Water bottle capacity: 1.75L. Inclu operating instructions, along with tions, recommended use, and mair nance tips.

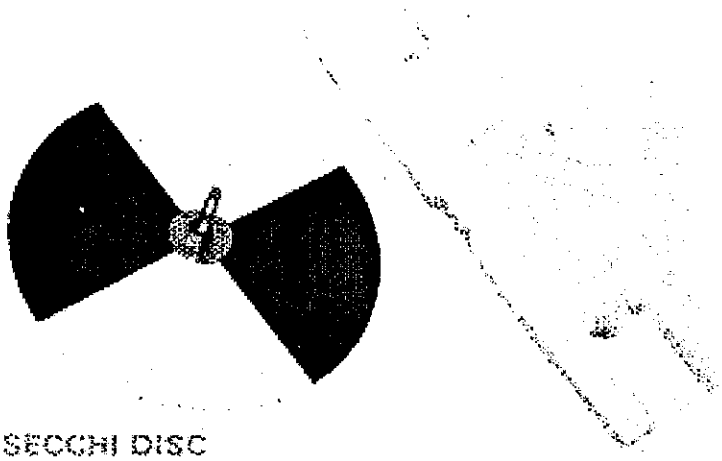
AJS68348 **79.95**

NEW

FIELDMASTER® PLANKTON NET

Made from durable Nitex® nylon for greater mesh size accuracy. Mini-nets are 5 dia. × 15"L. Student nets are 8 dia. × 20"L.

Mini-Net		
80 micron	AJS68116	76.70
153 micron	AJS68117	80.95
Student Net		
80 micron	AJS68120	91.25
153 micron	AJS68119	86.70
363 micron	AJS68121	88.70



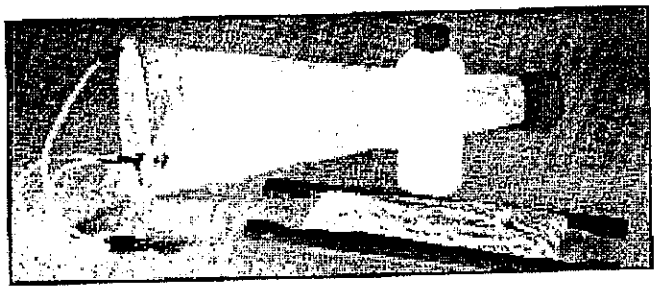
SECCHI DISC

Water clarity can be determined by measuring the depth that light can penetrate the water.

- *ABS plastic disc is lowered into water until the pattern is unrecognizable*
- *Markers mark water and measure the distance it will that was necessary to lower the disc*

Consists of weight, 7 7/8" (20cm) disc, and 48' (15m) of line.

AJS68338 **24.20**

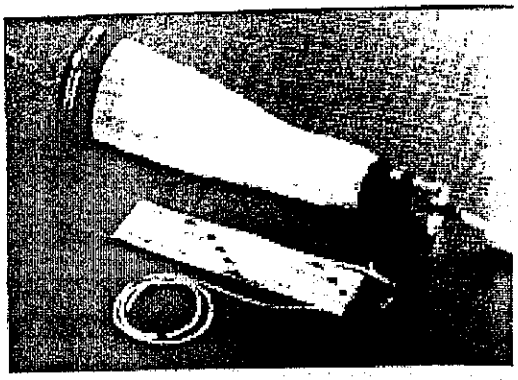


Wildco® Fieldmaster Plankton Net

Has All the Components Necessary to Start Collecting Samples Right Away

The 12" deep net is made of 153 µm mesh and is mounted on a 5" diameter sturdy metal rim. A 2" threaded plastic adapter is located at the apex of the net accepts the included 8 oz. polyethylene sample bottle. It also includes twenty meters of ⅛" braided nylon line for towing and instructions.

10 W 0720 112.00



Student Plankton Net

Perfect for Introductory Plankton Sampling

This 20 ¾" Nitex plankton net is attached to a 6" diameter stainl steel ring and bridle. A clear, polycarbonate cod-end assembly w latex tube and pinch clamp and a ten meter calibrated polypropyle line are also included.

21 W 1053	363 µm mesh	**99.95**
21 W 1054	153 µm mesh	**99.95**
21 W 1055	80 µm mesh	**99.95**

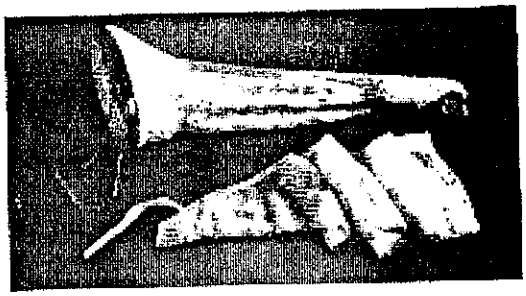
Plankton Nets

WARD'S Convertible Plankton Tow Net

Comes with Two Interchangeable Net Bags

This unique set is sure to accommodate all of your plankton collecting needs. It comes with one extra-coarse net bag (1,200 µm) and one standard net bag (400 µm), and both nets are 36" deep. Clamps located on the 10" diameter, brass ring frame secure the nets and can be adjusted with a screwdriver. A test halter that holds up to 150 lbs. is constructed of three brass chains that meet at a snap swivel, where a towing line (available separately) can be attached. A hose clamp, plastic collecting flask, six screw-top glass vials, and assembly instructions are also included.

10 W 0630 159.00



Replacement Extra-Coarse Mesh Net Bag

10 W 0634 9.99

Replacement Standard Mesh Net Bag

10 W 0632 15.95

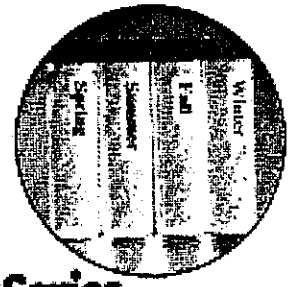
Wildco® Wisconsin-Style Plankton Net

For Quantitative Vertical Tows

This widely used sampler has long been the standard for sampling hundreds of lakes. The heavy bucket drops rapidly to the depth desired, and the large, 5" mouth diameter provides a filtering area that allows for rapid filtration of water passing through the extra-fine mesh (80 µm) net. The bucket holds 250 mL and does not require a stopper for draining. Both the bucket and the net frame are constructed of stainless steel and the bridle is constructed of brass chain. It comes in a protective carrying case. Overall net size: 7" dia. x 20

21 W 0201 345.00

DON'T MISS



Demonstrate the Diversity and Density of Plankton

Plankton Tow Series

This set of plankton tows was taken at various times during the four seasons of the year off the coast of Maine. The set also includes information about the tow. The tow for each season is 10 mL and is packaged in its own vial. It is enough material for ten students.

68 W 0026 29.95

For a wide variety of aquatic preserved specimens, turn to the Preserved Materials section of this catalog.

WARD'S Plankton Tow Net

Economical Apparatus for Sampling

This tow net comes assembled with one standard 400 µm mesh net bag attached stainless steel 10" ring with a muslin sheet around the ring. The net bag has a dep 36". A test halter of three brass chains meet at a snap swivel, from which a line (a able separately) can be secured for towing. It also includes a hose clamp, plastic co ing flask, and six screwtop glass vials.

10 W 0690 96.50

Environmental—Water Sampling, continued

BOD Bottle

Collect and incubate water samples for accurate dissolved oxygen and Biochemical Oxygen Demand (BOD) readings. This affordable, thick glass bottle has a ground stopper to prevent oxygen from entering or leaving the collected water sample. 300 mL capacity: 2¾"W × 6¼"T.

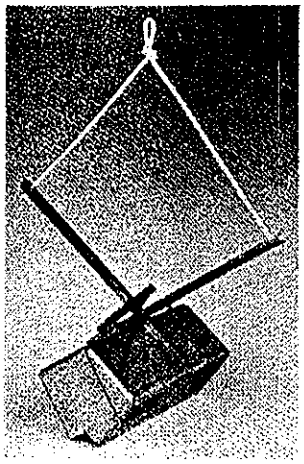
Catalog No.	Description	Price/Each
AP6209	BOD Bottle, 300 mL	$10.30

BOD Bottle
AP6209

Bottom Sampling Dredge

Collect any soft bottom sediment—sand, mud, silt, gravel—with this convenient and easy-to-use bottom sampling dredge. Simply lower the sampler over a select area, lift the bridle, and watch the jaws close in scissor-like fashion to retrieve a volume of sediment. The sturdy stainless steel sampler has a trigger to hold the sampler open during lowering and a strong rope connecting the two arms. The sample, if released carefully, can be analyzed as it appeared on the bottom. Chamber size 3"L × 3"W × 3"H. Sample size 68 in³.

Catalog No.	Description	Price/Each
AP5059	Bottom Sampling Dredge	$198.90



Bottom Sampling Dredge
AP5059

Dissolved Oxygen Meter

Quick, accurate dissolved oxygen readings that require no interpretation, drop counting, or color matching. There is not a more efficient, accurate, and repeatable means of measuring the most essential compound in aquatic systems. The design simplicity of this meter enables anyone to enjoy frustration-free data.

Features include:

- A range of 0 to 19.9 ppm; 0 to 100% saturation
- A resolution of 0.1 ppm; 0.1% saturation
- Simultaneous temperature display, 0 to 60 °C
- Automatic temperature compensation from 0 to 60 °C
- Manual salinity and altitude compensation
- Easy, two-point calibration without chemicals
- Battery powered, with 100-hour battery life
- Easy-to-read LCD display

The included probe is tough and easy to maintain, with a 3-ft cable that makes measurements without the hassle of sample retrieval. This meter is the ideal choice for BOD analysis and all types of field and laboratory testing—from Lake Superior to your 10-gallon aquarium.

Meter is supplied complete with probe, replacement membranes (5), fill solution, battery, thorough instructions, and a hard carrying/storage case. Replacement probe membranes and fill solution are available separately. Membranes are fragile, but with proper care will withstand 3 or more months of regular use.

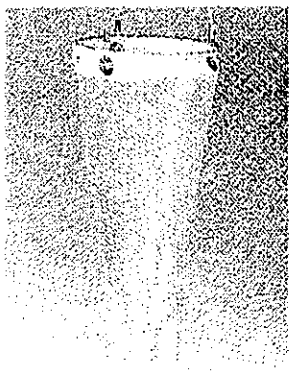
Catalog No.	Description	Price/Each
FB0422	Dissolved Oxygen Meter	$485.00
FB0423	Dissolved Oxygen Probe Membranes, Package of 5	20.00
FB0559	Dissolved Oxygen Fill Solution	17.00

Dissolved Oxygen Meter
FB0422, etc.

Plankton Net

High-quality conical net of fine mesh, 153-micron nylon fabric. A clear, graduated collecting tube is attached to the end of the net to facilitate collecting and transferring collected plankton. The net mouth is held open by a stainless steel ring which will not rust or corrode. A three-line bridle attaches the net to the tow line and ensures that proper orientation is maintained during use. Net measures 5"D × 15"L, and includes a spare collecting tube.

Catalog No.	Description	Price/Each
FB0566	Plankton Net	$119.00



Plankton Net
FB0566

Environmental—Water Models, continued

Water Treatment Activity Model

Build a model water treatment plant—right in your own classroom—with this hands-on activity! Graphically demonstrate the physical, chemical, and biological processes involved in water treatment as your class gets a firsthand view of water treatment and sewage remediation. Students build their own model of a sewage treatment plant—complete with filtration, aeration and bioremediation capabilities. Durable plastic model is accompanied by all materials needed to test and treat water, including filter paper, simulated pollutants, bioremediation agents, air pump and test materials. Comprehensive teacher's guide and student copy masters are included. Model size: 13¼"L × 4½"W × 17¼"H.

Catalog No.	Description	Price/Each
AP5312	Water Treatment Activity Model	$199.95

Water Treatment Activity Model AP5312

"You Deserve the Flinn Experience"

Service

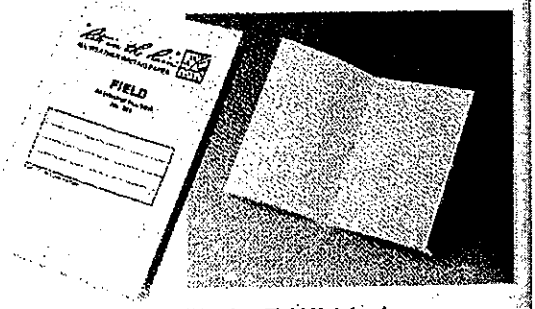
Friendly, polite customer service representatives are always ready to serve you. We still do business the old fashioned way... treating customers the way we would want to be treated if we were the customer. Give us a call and experience the Flinn difference.

Environmental—Water Sampling

All-Weather Field Notebook

Are your students' field notes wet, soggy, and illegible from rain, humidity, mud puddles, or fish slime? Your problem is solved—with this handy, lightweight field notebook, specially designed for recording critical field data in extreme wet weather conditions. Bound notebook contains unique Rite in the Rain® all-weather writing paper, which has an exclusive waterproof coating. Paper can withstand long periods of immersion without losing its strength or writeability. Has an all-weather durable yellow cover, 48 numbered pages, and can be used with any standard pencil or ball-point pen.

Catalog No.	Description	Price/Each
AP5150	All-Weather Field Notebook	$4.35

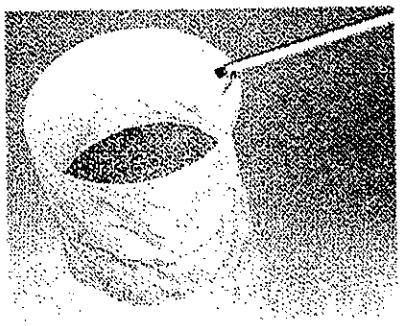


All-Weather Field Notebook AP5150

Aquatic Dip Net

A strong, yet lightweight anodized aluminum handle and a plated, spring steel net ring make this aquatic dip net durable and corrosion proof. Net ring is 12 inches in diameter and is firmly fastened to the 36-inch handle. Net bag is made of sturdy, unbleached muslin with a skirt extending below the green polyester mesh bottom to prevent snagging.

Catalog No.	Description	Price/Each
FB0020	Aquatic Dip Net	$38.75



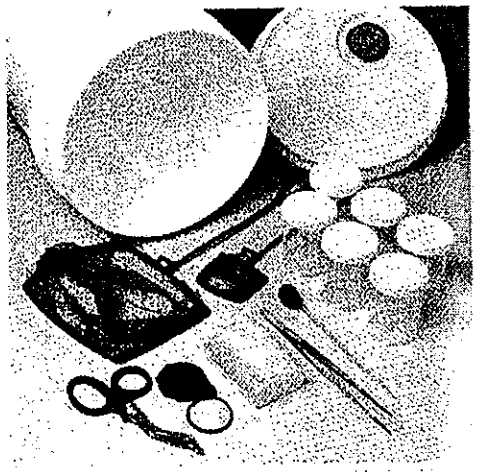
Aquatic Dip Net FB0020

Aquatic Collecting Starter Kit

FLINN EXCLUSIVE QUALITY

Ready to head to your local river, pond, or stream for environmental studies? Our basic collecting set provides all needed equipment to get started. Materials can be conveniently carried to the collection site in the large, durable collection bucket included with the materials. Each set includes: a 10" stainless steel collecting forceps, a 10" collecting syringe, two dip nets of different sizes, a pair of stainless steel utility scissors, six specimen jars, a folding field magnifier, and 100 reclosable specimen bags. Every student collecting team will want these useful items—order one set per team.

Catalog No.	Description	Price/Each
FB1580	Aquatic Collecting Starter Kit	$44.00



Aquatic Collecting Starter Kit FB1580

ENVIRONMENTAL—WATER SAMPLING continued on next page.

uatic Nets

escoping Boat Net

net has a two piece ¾" aluminum octagon handle and rubber grip for easier handling. The spring k pins hold the telescoping sections securely in place. The net frame is 17" x 21" and the bag is vith a 1" mesh. The handle expands from 2–4'.

5		42.50

FRD'S Shallow Circular Aquatic Net

frame of this general purpose net fits securely to the 4', wood handle by an all-metal locking there is no swelling or warping. The frame is 10" in dia. and the canvas-reinforced nylon mesh deep. The mesh is 1,200 µm.

00		29.95
05	Replacement Net Bag	9.75
15	Replacement Handle	23.95

FRD'S Deep Circular Aquatic Net

ith a large, 18" bag has a greater capacity. The mesh is 1,200 µm. The 4' wood handle features a forced tip and attaches to a removable frame. The frame dia. is 12".

10		35.95
15	Replacement Net Bag	12.00
25	Replacement Handle	23.95

FRD'S D-Frame Aquatic Net

e steel design of this 12" frame net makes it easier to sweep over aquatic vegetation, shallow cuts, or near the shore. The 4' long wood handle is reinforced at the frame, and the 18" bag is et of a 1,200 µm mesh.

20		39.95
15	Replacement Net Bag	12.00
25	Replacement Handle	23.95

ldco® Indestructible Aquatic Net

atures a full-cover muslin shroud around the 10" bag that protects the mesh from snags in heavy . The steel triangular frame that measures 12" on each side, and the 52" removable, wood han- this net ideal for scooping shallow sediments. The 800 x 900 µm mesh will trap all but the small- sms.

50		140.00
55	Replacement Bag	82.50

ldco® Rectangular Aquatic Kick Net

atic invertebrates into this 10" net by either kicking up the shallows in front of it or by scooping rward. The muslin shroud at the bottom of the 800 x 900 µm mesh bag allows you to view col- ples. The stainless steel frame is 18"W x 8"L and the 5' wood handle is removable in two parts.

40		189.50
47	Replacement Bag with Clips	115.00

FRD'S Twin Pole Aquatic Kick Net

ick this unique net through the water to collect your specimens. The one square meter net is to two 48" poles and the 500 µm mesh HDPE screen is reinforced with extra-heavy muslin.

46	59.00

ldco® Surber-Type Stream Bottom Sampler

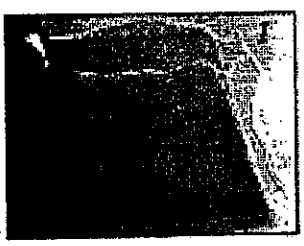
sampler on the stream bottom and stir up the substrate within the 12" square frame boundary to ments and invertebrates into the 24" bag made of 1,000 mm mesh. The two pivoting solid brass d flat for storage and lock into place at right angles when sampling. This sampler is designed for llow streams 18" deep or less.

50	321.25

yester Seine

es 10' long, 4' feet l is constructed of ¼" mesh. It comes with l leads, but not poles.

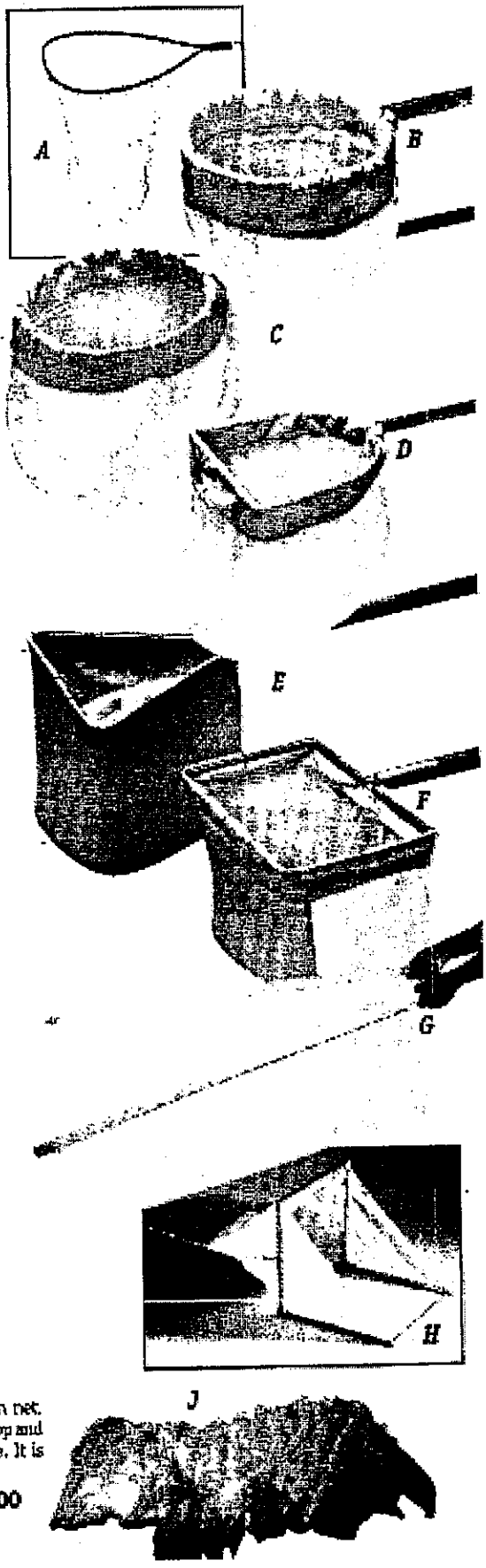
39	19.95



J) Nylon Seine

Constructed of ¼" mesh nylon net, the net features floats, leads, top and bottom lines, and 480 lb. rope. It is 30' x 4' deep.

21 W 0231	75.00

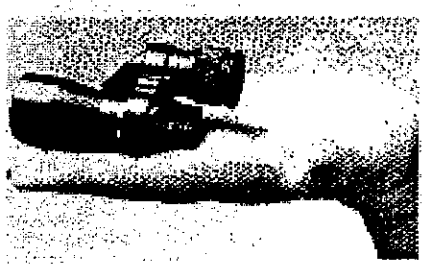


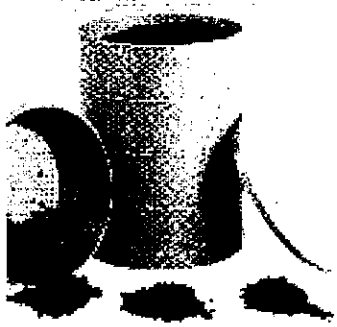
CNISCOPE

ıe magnifying instrument combines two com-
ıls to create three different optical devices. An
0mm monocular, a 3x stand magnifier, and
threaded together, a precision 30x portable
scope.

Magnification: 3x
oscope Magnification: 30x
ıcular Specifications (8 x 20mm)
ıimum Focusing Distance: 6'
ın Type: BK-7 porro
'd of View: 288' at 1,000 yards
ight: 4 oz. (100g)

388544 **74.00**





3020 **18.20**

STIC UTILITY PAIL

eight, multi-use storage pail with carrying
and smooth, splinter-proof lid to help pre-
ıils. Measures 8 dia. x 7"H and holds up to
vater.

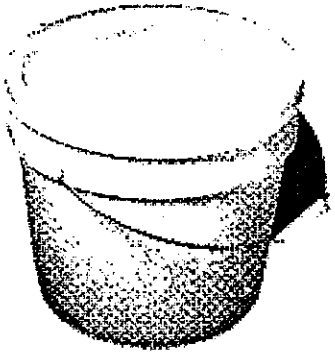
5115 **5.00**

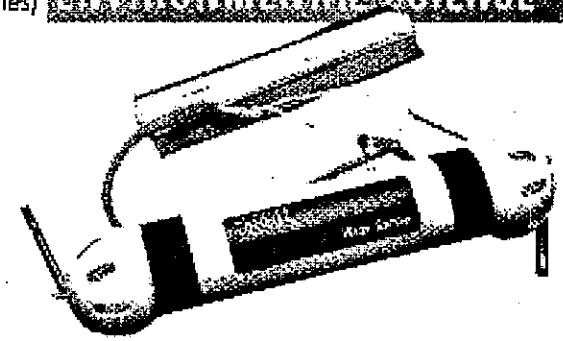
NEW

SCREEN SIEVES KIT

Your students can separate and grade soil samples with this screen set

- *To use, simply place soil in the top container and shake the set—particles of various sizes filter through the sieves and sort by size*
- *Includes 4 sieves, 1 bottom pan, and 1 lid; one set per class*
- *Measures 6 x 2"*





1.5L WATER SAMPLER

This handy 1.5L canister makes it easy to study the dissolved oxygen content, pH level, temperature, minerals, and various pollutants in a water sample. The values of these quantities vary with water depth and indicate what forms of life are present.

- *Easy to use—simply lower the sampler to the desired depth and tug sharply on the line to secure a water sample*
- *Uses only one line to raise and lower the canister and trigger the device, eliminating the problem of tangled lines*
- *Comes complete with canister, a 15m cord, and experiment manual*

AJ524041 **64.50**

SNAG PROOF AQUATIC NETS

A sturdy 36" aluminum handle and unbleached muslin bag ensure this high-quality unit will give long service with minimal care.

- *Net design eliminates snagging, tangling*
- *Nylon mesh portion of the bag is protected by skirts that extend below the filtering area*
- *Round net bag has an opening of 12"*

AJ917561 **44.45**

Fisher