

2016-2017 Resource Guide

Advanced Placement

BIOLOGY • ENVIRONMENTAL SCIENCE



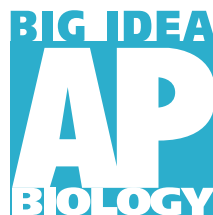


Advanced Placement® Biology

The Advanced Placement* Biology curriculum, developed by the College Board, offers high school students the opportunity to gain credit for introductory college level biology courses. Since 1991, EDVOTEK® has proudly offered reagents and equipment for all labs necessary to fulfill the AP Biology Lab requirement.

The EDVOTEK Advantage:

EDVOTEK's **BIG IDEA AP Biology Investigations** are designed with three principles in mind: safety, value, and reproducibility. We've eliminated the need for using toxic chemicals that not only have the potential for causing harm to students, but also pose a threat to the environment. Our labs provide the most value and are tested to ensure that you get the results you expect.



Help your high school students prepare for higher education as they learn the core concepts of this innovative and exciting introductory level college course!

www.edvotek.com/Experiments/Advanced-Placement-Biology

**BEST
VALUE**

Cat. #AP-PKG \$829

Complete AP Lab Package

Big Idea 1: Evolution

- Investigation 1: Artificial Selection
- Investigation 2: Mathematical Modeling: Hardy-Weinberg
- Investigation 3: Comparing DNA Sequences to Understand Evolutionary Relationships with BLAST

Big Idea 2: Cellular Processes - Energy and Communication

- Investigation 4: Diffusion and Osmosis
- Investigation 5: Photosynthesis
- Investigation 6: Cellular Respiration

Big Idea 3: Genetics and Information Transfer

- Investigation 7: Cell Division - Mitosis and Meiosis
- Investigation 8: Biotechnology - Bacterial Transformation
- Investigation 9: Biotechnology - Restriction Enzyme Analysis of DNA

Big Idea 4: Interactions

- Investigation 10: Energy Dynamics
- Investigation 11: Transpiration
- Investigation 12: Fruit Fly Behavior
- Investigation 13: Enzyme Activity

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BIG IDEA 1: Evolution

Students will develop an advanced understanding of the process of evolution and how it impacts the diversity of life.

INVESTIGATION

1

Cat. #AP01

\$79

Artificial Selection



For 10 Lab Groups. Students will grow one generation of Quick Plants™ and identify traits that vary in the population. Then they will perform artificial selection by cross-pollinating only selected plants and observe the trait differences between the two populations to learn how selection works.

Kit includes: instructions, Quick Plant™ seeds, nylon mason twine, potting mix, Miracle-Gro Fertilizer, vermiculite, bee mounts, plastic magnifier, and wooden toothpicks.

All you need: growing system (reused plastic soda or water bottles (500 ml)), light box system, digital cameras, lab notebook, water, tape, razor.

Storage: Room Temperature.

INVESTIGATION

2

Cat. #AP02

\$19

Mathematical Modeling Hardy-Weinberg

	A	a
A	AA	Aa
a	Aa	aa

For 10 Lab Groups. The application of the Hardy-Weinberg law of genetic equilibrium demonstrates that mutations, genetic drift and natural selection have a dramatic effect on gene frequency in a population. Using computer and Internet access, students will explore how a hypothetical gene pool changes from one generation to the next.

Kit includes: instructions, PTC taste paper and control taste paper.

All you need: computer with spreadsheet software and calculator with square root function.

Storage: Room Temperature.

Investigation 2 Alternative:
Cat. #345 Exploring the Genetics of Taste: SNP Analysis of the PTC Gene Using PCR

INVESTIGATION

3

Cat. #AP03

FREE!

Comparing DNA Sequences to Understand Evolutionary Relationships with BLAST

For 10 Lab Groups. In this experiment, several genes will be submitted to an internet database to identify and compare the genes. Students will then use this information to construct a cladogram - a phylogenetic tree representing evolutionary relatedness of species.



Kit includes: instructions.

All you need: computer with internet access.

Investigation 3 Alternatives:
Cat. #339 Sequencing the Human Genome
Cat. #340 DNA Bioinformatics



BIG IDEA 2:

Cellular Processes, Energy, & Communication

Students will develop an advanced understanding of biological systems and how dynamic homeostasis is maintained in them by utilizing molecules and free energy for growth and reproduction.

INVESTIGATION

4

Cat. #AP04

\$95

Diffusion & Osmosis



For 10 Lab Groups. In this experiment, students use artificial cells to study the relationship of surface area and volume. Then, they create models of living cells to explore osmosis and diffusion, and observe osmosis in living cells. Various diffusion and osmosis principles are performed in this lab.

Kit includes: instructions, agar powder, phenolphthalein solution, sodium hydroxide (NaOH) pellets, powdered sucrose, NaCl, powdered glucose, ovalbumin, dialysis tubing, large transfer pipets, microscope slides and cover slips.

All you need: beaker, ruler, razor, plastic spoon, paper towel, timer, scales, graph paper, distilled or deionized water, elodea tip or moss, microscope.

Storage: Room Temperature.

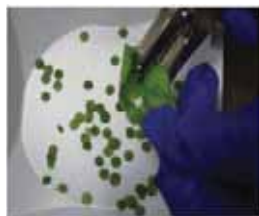
INVESTIGATION

5

Cat. #AP05

\$69

Photosynthesis

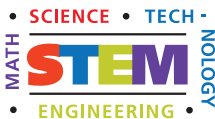


For 10 Lab Groups. In this experiment, students will learn how to measure the rate of photosynthesis indirectly by studying a floating leaf disk assay, and test different variables that might affect the photosynthesis process.

Kit includes: instructions, sodium bicarbonate (baking soda), liquid soap, plastic syringes, transfer pipets, plastic cups, metric rulers.

All you need: leaves, timer, light source, hand-held hole punch, beakers.

Storage: Room Temperature.



INVESTIGATION

6

Cat. #AP06

\$109

Cellular Respiration

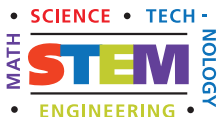


For 10 Lab Groups. In this experiment, students learn how to apply the gas laws to the function of the microrespirometer. Students will observe cell respiration of germinating seeds and describe the effects of temperature on the rate of cell respiration.

Kit includes: instructions, 1 ml pipet, glass beads, peas, potassium hydroxide solution, cork stoppers, absorbent cotton, nonabsorbent cotton, plastic vials, parafilm.

All you need: thermometers, trays (at least 14" long), silicone glue, ice, cork borer, tape, timers.

Storage: Room Temperature.





BIG IDEA 3:

Genetics & Information Transfer

Students will develop an advanced understanding of how essential life processes are carried out in living systems through storage, retrieval, and transmission of information.

INVESTIGATION

7

Cat. #AP07

\$79

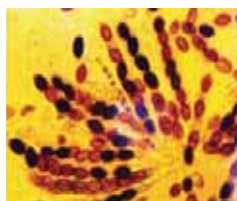
Cell Division - Mitosis and Meiosis

For 10 Lab Groups. Students learn to identify and differentiate various stages in mitosis and meiosis. Onion root tips are stained to identify the various stages and duration of mitosis. Meiosis and “crossing over” in *Sordaria* are also demonstrated in this experiment. Students will also have an opportunity to analyze the mechanism involved with loss of cell cycle control in cancer.

Kit includes: instructions, pipe cleaners (in 2 colors), plastic beads, carbol-fuchsin (Ziehl-Neelson) stain, lectin, plastic bags, slides, cover slips, sand, conical tubes, plastic cups.

All you need: colored pencils (2 colors), microscope, 10 onion bulbs, ethanol, glacial acetic acid, hydrochloric acid, razor blades, scissors, scientific cleaning wipes (kimmwipes), disposable gloves.

Storage: Room Temperature.



INVESTIGATION

8

Cat. #AP08

\$85

Biotechnology - Bacterial Transformation

Transformation with Green Fluorescent Protein

For 10 Lab Groups. In this experiment, transformed cells take up a plasmid containing the GFP gene, which has been isolated from the jellyfish *Aequorea victoria*. Transformed colonies expressing the GFP protein are visibly green in normal light but will fluoresce brightly when exposed to long wave UV light.



Kit includes: instructions, BactoBeads™ *E.coli* GFP Host, supercoiled pFluoroGreen, ampicillin, IPTG, CaCl₂, ReadyPour™ Luria Broth Agar (sterile), Luria Broth Medium for Recovery (sterile), petri plates (small), petri plates (large), plastic microtipped transfer pipets, wrapped 10 ml pipet (sterile), toothpicks (sterile), inoculating loops (sterile), microcentrifuge tubes.

All you need: automatic micropipet (5-50 µl) and tips, two water baths (37°C and 42°C), thermometer, incubation oven (37°C), pipet pumps or bulbs, ice, marking pens, hot plate or microwave, hot gloves, long wave UV light.

Storage: Some Components Require Refrigerator and Freezer Storage.

SCIENCE • TECH-
MATH • STEM • NOLGY
ENGINEERING

**Investigation 8
Alternative:
Cat. #224 Rainbow
Transformation**

EDVOTEK® 5 - 50 µl Variable Micropipet

Our newly redesigned Variable Micropipets are easy to use, sturdy, highly accurate and use standard micropipet tips.

Cat. #590 \$179



EDVOTEK® 1.8 L Digital Waterbath

Features digital temperature control from ambient to 95°C, low-water sensor, and stainless steel chamber.

Cat. #539 \$429





Cat. #AP09 \$85

Biotechnology - Restriction Enzyme Analysis of DNA

Restriction Enzyme Cleavage of Lambda DNA



For 8 Lab Groups. This experiment introduces restriction enzymes as a tool to digest DNA at specific nucleotide sequences. Bacteriophage lambda DNA has a linear structure with 6 *EcoRI* recognition sites and 7 *HindIII* recognition sites. Separation by agarose gel electrophoresis of these digests of lambda DNA will yield bands corresponding to the DNA fragments.



Kit includes: instructions, DNA samples, UltraSpec-Agarose™ powder, concentrated electrophoresis buffer, FlashBlue™ DNA stain, InstaStain® Blue cards, practice gel loading solution, 1 ml pipet, and microtipped transfer pipets.

All you need: horizontal gel electrophoresis apparatus, D.C. power supply, automatic micropipets with tips, balance, microwave, hot plate or burner, pipet pump, 250 ml flasks or beakers, hot gloves, safety goggles and disposable laboratory gloves, small plastic trays or large weigh boats (for gel destaining), DNA visualization system (white light), and distilled or deionized water

Storage: Room Temperature Stable. Storage of Ready-to-Load QuickStrip™ DNA samples in the Refrigerator is Recommended.

Dual DNA Electrophoresis LabStation™

Supports up to 16 students.

Includes:

- 2 Cat. #502 - M12 Electrophoresis Apparatus (7 x 14 cm Tray)
- 1 Cat. #509 - DuoSource™ 150 (75/150 V for 1 or 2 units)
- 2 Cat. #590 - Variable Micropipets (5 - 50 µl)

Cat. # 5063 \$799



youtube.com/EdvotekInc



Video: Preparing Agarose Gels



Video: Staining with InstaStain® Blue



Video: Performing Agarose Gel Electrophoresis



Video: Staining with FlashBlue™



BIG IDEA 4: Interactions Among Living Systems

Students will develop an advanced understanding of interactions among living systems and the complex properties of these interactions.

INVESTIGATION
10

Cat. #AP10 Energy Dynamics

FREE!



For 10 Lab Groups. In this exercise, students will explore the basic ecological concepts of energy flow and the complex interactions between organisms with an energy dynamics game.



Kit includes: printable instructions, role cards, energy unit templates, and supply and loss station labels.

All you need: printer paper, scissors, containers (5"x5" x5" or larger), sandwich bags, laminator (optional), beans or tokens (optional)

Storage: Room Temperature.

INVESTIGATION
12

Cat. #AP12 Fruit Fly Behavior

\$99



For 10 Lab Groups. The objective of this experiment is to introduce students to the concept of distribution of organisms in a resource gradient and to learn the difference between kinesis and taxis.

Drosophila must be requested 3 weeks prior to use.

Kit includes: instructions, Wild-type *Drosophila*, transfer pipets, cotton balls, Edvotek® Instant *Drosophila* Growth Media, *Drosophila* vials, vial plugs.

All you need: plastic water bottles (2 per group and extra caps), any combination of household condiments, fruits, and lab chemicals, laboratory notebook, dissecting microscopes, color pens (for graphing), transparent colored film (for wrapping chamber), clear tape, goggles, funnel, timer, water.

Storage: Room Temperature.

INVESTIGATION
11

Cat. #AP11 Transpiration

\$89



For 10 Lab Groups. The principles of diffusion and osmosis are applied to the movement of water within plants. Emphasis is given to water potential transport and the effect of the plant environment on transpiration.



Kit includes: instructions, Bush Bean seeds (*Phaseolus vulgaris*), 2x Toluidine Blue O stain, parawax, plastic tubing, microtomes (nuts and bolts), petri plates, 0.1 mL pipets.

All you need: 10 mL pipets, petroleum jelly, light source with 100 Watt bulb, fans(s), plant mister (a spray bottle), potting soil, large plastic bags, ring stands & clamps (or buret holder), microscope slides, microscope(s), cover slips, slide mounting medium (i.e. 50% glycerol), 50% ethanol, new razor or scalpel blades, weighing scale or balance, small spatula.

Storage: Room Temperature.

INVESTIGATION
13

Cat. #AP13 Enzyme Activity

\$99



For 10 Lab Groups. Learn about enzyme catalysis, the nature of enzyme action and protein structure-function relationships. Students perform an enzyme assay and determine the rate of the enzymatic reaction. This kit does not use sulfuric acid or potassium permanganate.



Kit includes: instructions, hydrogen peroxide solution, guaiacol solution, phosphate buffer pH 3, phosphate buffer pH 7, phosphate buffer pH 10, phosphate buffer pH 14.

All you need: turnip root, distilled or deionized water, pipet pumps or bulbs, Erlenmeyer flask, 500 mL spectrophotometer, water baths, filter paper and funnel, test tube racks, test tubes (13 x 150 mm), thermometer, cheesecloth, parafilm, hot plate, timer or clock with second hand, lab permanent markers, ice, razor, goggles, and blender.

Storage: Refrigerator.



Advanced Placement® Environmental Science

AP® Environmental Science encourages students to engage in scientific exploration of the natural world. This interdisciplinary curriculum studies the relationships between natural systems using techniques from geology, biotechnology, ecology, physics, chemistry, and geography. Students are also encouraged to evaluate natural and man-made environmental problems, and to discuss the possible solutions. Edvotek is dedicated to bringing biotechnology into your Environmental Science laboratory.



Cat. #338

\$219

Exploring Plant Diversity with DNA Barcoding

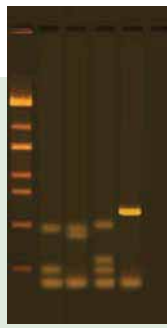
For 10 Lab Groups. In this inquiry-based lab, your class will explore the genetic diversity of ten selected plants. Students will isolate plant DNA and use PCR to amplify two polymorphic regions of the chloroplast genome. Digestion of PCR products and analysis by agarose gel electrophoresis will then be used to generate unique identification profiles for each plant.



Kit includes: instructions, DNA extraction reagents, PCR EdvoBeads™, microtubes, control DNA and primers, DNA ladder, restriction enzyme, restriction enzyme reaction and dilution buffers, ultrapure water, wax beads, gel loading dye, agarose, electrophoresis buffer, InstaStain® Ethidium Bromide and FlashBlue™ stain.

All you need: thermal cycler, centrifuge, isopropanol, distilled water, electrophoresis apparatus, power supply, adjustable micropipets and tips, microwave or hot plate, waterbath, UV transilluminator.

Storage: Some Components Require Freezer Storage.



Cat. #962

\$175

Identification of Genetically Modified Foods Using PCR

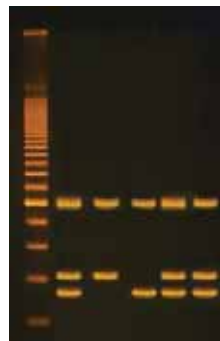


For 10 Lab Groups. Some foods contain raw materials from genetically modified organisms (GMO). Examples include tofu, corn flakes and corn meal. In this experiment, your students will extract DNA from food or plant material and perform PCR to determine if any GM indicator genes are present. Amplified DNA is separated and sized by agarose gel electrophoresis.

Kit includes: instructions, DNA extraction reagents, PCR EdvoBeads™, microtubes, control DNA and primers, DNA ladder, ultrapure water, wax beads, gel loading dye, agarose, electrophoresis buffer, InstaStain® Ethidium Bromide & FlashBlue™ stain.

All you need: micropipets to measure between 5 and 50 µl, tips, waterbath, microcentrifuge, thermal cycler, electrophoresis apparatus and power supply, microwave or hot plate, UV transilluminator.

Storage: Some Components Require Freezer Storage.





Cat. #121

\$85

Detection of Genetically Modified Organisms

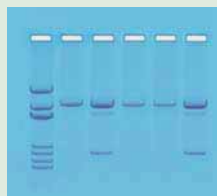
NEW

For 8 Lab Groups. For centuries, humans have used selective breeding and conventional hybridization to produce desirable qualities and to increase crop yields. Today, scientists use genetic engineering to directly manipulate the DNA, quickly producing these desirable traits. In this experiment, students will use agarose gel electrophoresis to explore the molecular methods used by scientists to identify genetically modified organisms. No thermal cycler is required. Students are also encouraged to explore the controversy surrounding the use of genetically modified organisms.

Kit includes: instructions, Ready-to-Load™ QuickStrip™ DNA samples, UltraSpec-Agarose™ powder, electrophoresis buffer, InstaStain® Blue and FlashBlue™ stain, calibrated pipet, and microtipped transfer pipets.

All you need: electrophoresis apparatus, power supply, automatic micropipet and tips, balance, microwave or hot plate, visualization system.

Storage: Room Temperature Stable. Storage of Ready-to-Load QuickStrip™ samples in the Refrigerator is Recommended.



Cat. #956

\$99

Bioremediation by Oil Eating Bacteria

Improved!

For 10 Lab Groups. Oil spills cause devastation to the environment killing sea life, birds, and coastal plants. Spraying areas of contamination with oil-eating microbes accelerates the degradation of the oil. This process is known as bioremediation. In this open-ended experiment, students will grow a mixture of oil-eating bacteria and observe their effectiveness at degrading a variety of oils.

Kit includes: instructions, oil-eating bacteria, tetrazolium indicator powder, growth medium, pipets.

All you need: shaking incubation oven (optional) or stir plate and stir bars, growth flasks, vegetable oil (or other food oils), distilled water, pipet pumps.

Storage: Room Temperature.



Cat. #856

\$105

Environmental Toxicity Response in *C.elegans*



For 10 Lab Groups. After one week of working with *C.elegans* under a microscope, your students will feel like real scientists! *Caenorhabditis elegans* is a soil nematode that has great potential for educational research, partly because of its rapid (3-day) life cycle, small size (1.0-mm-long adult), and ease of laboratory growth cultivation. Thousands of animals can grow on a single petri dish seeded with a lawn of *Escherichia coli* as the food source. Students will engage in an environmental toxicity scenario and will use pre-diluted concentrations of heavy metal solution to determine the effect on the worms. Time courses will be assessed.

Kit includes: instructions, *C.elegans*-normal, *C.elegans*-toxicity mutant, petri dishes, NGM medium, *E.coli* OP50 BactoBeads™, cell counting chambers, buffer, pipets, sterile loops, tubes and heavy metal compounds.

All you need: ethanol, timers, microscopes, covered box.

Storage: Some Components Require Refrigerator Storage.



Supported in part by NIH SBIR NCCR Grant.

E-Z elegans™ can be ordered up to 1 month before starting the lab.





Cat. #951

\$85

Water Quality Testing I: Chromogenic Analysis of Water Contaminants



For 10 Lab Groups. Testing drinking water for every possible type of pathogenic bacteria is slow and costly. Thus, drinking water is tested for coliforms - including the familiar *E.coli*. Presence of coliforms is an indicator of fecal contamination.

In this experiment, students will test for coliforms in simulated contaminated water using color and fluorescent reagents. They can use these same reagents to test water samples from the environment. As an extension activity, a Gram Stain test can be performed on the collected samples.

Kit includes: instructions, BactoBeads™, coliform detection broth, nutrient broth, indole detection reagent, conical tubes, inoculating loops, sterile swabs, and reagent.

All you need: long wave UV lamp.

Storage: Some Components Require Refrigerator Storage.



Cat. #952

\$185

Water Quality Testing II: PCR-based Testing of Water Contaminants

For 25 Students. Now your students can use PCR to detect water pollution due to sewage contamination. In this experiment, safe bacterial strains will be provided. As an extension to this experiment students test for water contamination in samples they provide.

Kit includes: instructions, control DNA and primers, BactoBeads™, DNA ladder, chelating agent, proteinase K, PCR beads, gel loading dye, agarose, electrophoresis buffer, InstaStain® Ethidium Bromide and FlashBlue™ stain.

All you need: micropipet and tips, waterbath, microcentrifuge, thermal cycler, electrophoresis apparatus, power supply, microwave or hot plate, UV transilluminator.

Storage: Some Components Require Refrigerator and Freezer Storage.



Cat. #953

\$185

Water Quality Testing III: Multiplex PCR-based Testing of Water Contaminants

For 25 Students. Drinking water is routinely tested for contamination. If a screening tests positive, more sophisticated tests are required. One such test uses PCR in multiplex format. In this experiment, students will test for the presence of three separate, classroom-safe organisms in a water sample using a single PCR reaction.

Kit includes: instructions, control DNA and primers, DNA ladder, BactoBeads™, proteinase K, PCR beads, gel loading dye, agarose, buffer, InstaStain® Ethidium Bromide and FlashBlue™ stain.

All you need: thermal cycler, waterbaths or heating blocks for PCR, waterbath, electrophoresis apparatus, power supply, micropipets with tips, balance, microcentrifuge, microwave or hot plate, UV transilluminator, water & ice.

Storage: Some Components Require Refrigerator and Freezer Storage.



ENVIRONMENTAL

AP

Cat. #292

\$99

Dissolved Oxygen and Aquatic Primary Productivity

For 10 Lab Groups. The experiment measures dissolved oxygen concentration in water samples and the primary productivity of a sample using the Winkler technique.

Kit includes: instructions, sodium iodide, sodium hydroxide, manganese sulfate, starch solution, sodium thiosulfate, nitrogen enrichment solution, phosphorous enrichment reagents.

All you need: grow lights, pipets, sealable containers or BOD bottles, plastic window screens, burettes, flasks, beakers, eyedroppers, filter paper, aluminum foil, graph paper, sulfuric acid, pond or lake water.

Storage: Room Temperature.



ENVIRONMENTAL

AP

Cat. #905

\$109

The Dose Makes the Poison: Testing the Environmental Impacts of Pollution

NEW

For 10 Lab Groups. In this experiment, students explore pollution issues by developing and performing a bioassay that tests the effects of different toxicant concentrations on plants.

Kit includes: instructions, radish seeds, plant growth medium, antifungal powder, pollutant solutions, cheese cloth, petri dishes, transfer pipets, seriological pipet, conical tubes, microcentrifuge tubes, small loops.

All you need: waterbath, pipet pump, microwave or hot plate, 70% ethanol, sterile water, bleach, automatic micropipet and tips, parafilm, string, rulers, growth light (optional), analytical balance (optional).

Storage: Some Components Require Refrigerator and Freezer Storage.



ENVIRONMENTAL

AP

Cat. #304

\$105

Biofuel from Alcohol Fermentation

For 10 Lab Groups. Ethanol fermentation is the most common method for biofuel production worldwide. In this kit, students will use flask fermenters to quantify sugar stabilization and ethanol production by controlling variables such as temperature and aeration. The students can then compare the efficiency of their fermentations.

Kit includes: instructions, YeastBeads™, Growth Medium, Sucrose, Benedict's solution, pH paper, microcentrifuge tubes, one hydrometer.

All you need: thermometers, lab glassware, autoclave or microwave, incubator, automatic micropipets and tips, hot water bath.

Storage: Some Components Require Refrigerator Storage.



Cat. #541 \$1,799

EdvoCycler™

This stand alone classroom PCR machine features a 0.2 ml tube block for up to 25 samples.



Cat. #546 \$449

Incubation Oven

Features a digital temperature control from Ambient +1° C to 60° C.

Related Equipment

Transform your classroom into a state-of-the art research lab with Edvotek's high quality biotechnology equipment! Our research quality equipment will provide your AP students with an authentic college science experience. We offer many different products to meet your scientific needs. Contact an Edvotek BioEducation Specialist at 1.800.EDVOTEK learn more about outfitting your classroom!

EQUIPMENT

Cat. #504

\$215

Newly
Redesigned

M12 Dual Electrophoresis Apparatus

For 2 Lab Groups. Includes: One Electrophoresis Apparatus, Two 7 x 7 cm Trays, Two 6 tooth combs, Two 8/10 tooth combs, Four rubber end caps.



EQUIPMENT

Cat. #509

\$179

DuoSource™ 150 75/150 Power Supply

For 1 or 2 units. The DuoSource™ 150 is a great value and runs gels quickly in only 20-30 minutes (at 150 V)! Can operate two M6Plus units, two M12 units or two HexaGels.



EQUIPMENT

Cat. #552

\$129

White Light Box

EDVOTEK's all new White Light Box features a spacious 25 x 25 cm viewing area illuminated by long life LEDs and is housed in a slim aluminum body. It's designed to safely enhance the visualization of DNA stained with FlashBlue™, proteins stained with Coomassie Blue and autoradiograms.



EQUIPMENT

Cat. #969

\$35

Long Wave UV Mini-Light

A hand-held UV light that is used to detect hydrolysis of the fluorescent substrate and fluorescent *Artemia* and *Daphnia* after their ingestion. Also useful for observing fluorescence in Green (GFP) and Blue (BFP) fluorescent proteins.



EQUIPMENT

Pipets & Liquid Handling

EDVOTEK® Variable Micropipets

- Cat. # 590 5 - 50 µl Micropipet \$179
 Cat. # 591-1 20 - 200 µl Micropipet \$179



Our Variable Micropipets are easy to use, sturdy, highly accurate and use standard micropipet tips. The volume is easily selected by twisting the top. The lightweight design and tip ejector makes operation fast & easy. A tool and instructions are included for self-calibration.

Micropipet Tips

- Cat. # 636 Yellow, 1-200 µl, 2 racks of 96 each \$10
 Cat. # 636-B Yellow, 1-200 µl, Bag of 1000 tips \$40
 Cat. # 637 100-1000 µl, 2 racks of 100 each \$20
 Cat. # 637-B 100-1000 µl, Bag of 1000 tips \$45



- Cat. # 594 \$299

Edvo-Pette™ Pipet Controller

This lightweight, cordless pipetting controller is ideally suited as an aliquoting tool for instructors and teaching assistants. It utilizes all standard serological pipets. The speed can be fine-tuned by applying varying finger pressure to the operating buttons.



Pipetting Pumps

- Cat. # 640 Green, for pipets 5-10 ml \$18
 Cat. # 641 Blue, for pipets up to 2 ml \$18



Disposable Pipets

- Cat. # 644 1 ml pipets, 200/pkg \$49
 Cat. # 645 5 ml pipets, 50/pkg \$25
 Cat. # 646 10 ml pipets, 50/pkg \$25



EQUIPMENT

- Cat. # 539 \$429

EDVOTEK® 1.8L Digital Waterbath

Newly improved to include digital temperature control! Additional features include a low-water sensor to prevent burn-outs and a deepened chamber to hold more bottles and flasks. The stainless steel chamber is corrosion resistant and temperature controlled from ambient to 95° C with cover (now included).



EQUIPMENT

- Cat. # 546 \$449

Incubation Oven

This economical bacterial incubator features a digital temperature control with a range from Ambient +1° C to 60° C. Ideal for growing bacteria on agar plates at 37° C or for Southern and Western Blot analysis at 60° C. Includes two adjustable/removable shelves for increased capacity. Accepts bottles and flasks up to 2 L. Dimensions: 10.3 x 9.3 x 12.8" (Internal), 13.2 x 14.5 x 18.7" (External).



EQUIPMENT

Cat. #553

\$199

Celestron LCD Digital Microscope II



Professional digital microscope with rotating objective lens turret with 3 lens powers: 4x, 10x, and 40x.

- 180-degree rotating full color 3.5" TFT LCD screen with onboard software, or TV output for display on large monitors.
- Built-in 5MP digital camera captures high-resolution images and 30fps SD video of your specimen.
- Fully adjustable mechanical stage for easy slide movement.
- 1 GB SD card included so you can save up to 620 high-resolution images, also includes dust cover, rugged canvas carrying case with shoulder strap, 5 prepared slides, and 4 plug international AC adapter.

EQUIPMENT

Cat. #541

\$1,799

EdvoCycler™



Our EdvoCycler™ stand alone classroom PCR machines is easy to use! Features a 0.2 ml tube block for up to 25 student samples! Comes pre-programmed with all Edvotek PCR protocols. These programs may be modified or deleted, plus there's extra memory slots for more! The vivid 7-line LCD displays all program parameters on a single screen. A heated lid makes operation a snap. No oil is required. Proudly made in the USA and backed by a 2 year warranty!



www.edvotek.com

EDVO-TECH Service

1.800.EDVOTEK

Mon. - Fri. 8am-5:30pm



Please Have the Following Info:

- Product Number & Description
- Lot Number on Box
- Order/Purchase Order #
- Approx. Purchase Date

Fax: 202.370.1501 • info@edvotek.com • www.edvotek.com

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- Order Products
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EQUIPMENT

Cat. #562

\$289

EDVOTEK® Electronic Balance



The EDVOTEK® Electronic Balance was developed especially for ambitious first-time users in the laboratory and academic sector. This balance has a readability of 0.01 g and a capacity of 300 g.

Features:

- Capacity: 300 g
- Readability: 0.1 - 0.01 g
- Backlit LCD display
- 0-40°C operating temperature
- Stackable storage
- Automatic external calibration
- AC adapter supplied, 6 AA batteries optional

EQUIPMENT

Cat. #566

\$925

UNICO® S1000 Educational Spectrophotometer



The UNICO Model S1000 Educational Spectrophotometer is an economical visible light unit designed for educational laboratories. Featuring a wavelength range of 400-1000 nm, 20 nm bandpass, analog interface, digital display, transmittance and absorbance modes and a sample compartment that accepts round tube or square cuvettes (with included cuvette adapter). The S1000 also features built-in second order filters that can be manually changed to help students better understand spectroscopy. Includes a box of 12 round optical glass cuvettes, a square cuvette adapter, user's manual with experiments and dust cover. Now includes a USB port for data transfer to PC's.

EQUIPMENT

Cat. # 763

\$30

4 Channel Timer



This timer allows the user to independently set four separate time channels. A loud alarm sounds when countdown is complete. Large, easy to use buttons. Includes magnetic clip.

EQUIPMENT

Cat. # 765

\$15

Nonmercury Thermometer

Graduated in 1°C divisions.
Range of -20° - 110° C.



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