

Advancing Science
Available Equipment List
 (Updated October 2010)

Quantity	<u>Equipment Description</u>
37	Portable Computer - Windows 98, 2000, or XP-based systems; loaded programs include: Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Graphical Analysis, LoggerPro (ULI Software), EcoBeakerHS, Science Sleuths, and more.
38	Computer Interfaces – Devices that connect various probes, sensors, and electrodes to a computer or TI-83+ calculator. See below for a complete list of available probeware.
8	Vernier Go!Links- allows simple connection of most Vernier probeware
	Vernier Probeware - Available probes, sensors, and electrodes are capable of testing the following factors/properties: motion, force, current, voltage, temperature, sound, pressure, pH, heart rate, respiration, conductivity, light, magnetism, oxygen, carbon dioxide, radiation, EKG, turbidity, and flow rate.
2	Probeware - VSPEC visible light spectrophotometer probes. Allows for near instantaneous analysis of solutions along with immediate graphing. Very versatile. These can be used in place of the Spec 20 D+
16	TI-83+ Graphing Calculator - calculator which stores tables, create graphs, perform statistical analysis. Used alone or with the LabPro Interface
11	Garmin iQue3200 PDA/GPS units -handheld which has GPS capabilities. Also accesses Moon phases by date data.
2	Buck 310 Student Gas Chromatographs with Portable Computer Interface - GC operates with compressed air carrier gas with CCD detector, utilizes PeakSimple Software, capable of separating alcohols, hydrocarbons and VOC's
2	Buck M-500 Infrared Spectrophotometer with Portable Computer Interface - single beam IR utilizes Basic EZ-Scan Windows Software and is capable of analysis with NaCl salt plates, KBr pellets and gas cell for vapors
2	UV-Visible Spectrophotometer - stand-alone instrument has scanning capabilities from 190 nm to 900 nm. Includes quartz, glass, and plastic cuvettes for analysis of a variety of materials. Also has a self-contained printer.
1	Thermo - Electron Fourier Transform Infrared Spectrophotometer - stand-alone, state of the art IR that can analyze virtually any type of sample by reflectance. Does multiple scans and averages them within seconds. Includes Thunderdome® and germanium crystal for easy analysis of all solids.
2	Turner Bio Systems TBS-380 Fluorometer - with mini cell adapter is a stand alone, specialized spectrophotometer with both UV and blue LED sources. It measures light emitted from compounds that fluoresce such as quinine, nicotine, fluoroscein and other such molecules.
6	Microscale Organic Chemistry Glassware Kit - small-scale glassware to do experiments that minimize the amount of chemicals needed to carry out reactions
8	Leica DM500 Binocular Compound Microscopes with digital camera adaptor - capable of magnifying images up to 1000 times; used with standard flat microscope slides (Not Available for loan)
16	Leica CME Binocular Compound Microscopes - capable of magnifying images up to 1000 times; used with standard flat microscope slides

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22	Accuscope 3000 Binocular (Compound) Microscope - capable of magnifying images up to 1000 times; used with standard flat microscope slides. <i>Available for long term loans of 2-3 weeks if needed.</i>
8	Motic Cameras - used in conjunction with microscopes and laptops for quantitative and qualitative image analysis. Used for digital scope labs.
2	Prepared Slides Sets - a mixture of different microscope slides for use in your classroom. Classroom sets of the following are available: onion root tip (mitosis), frog and human blood smears, earthworm cross section, <i>Pinus</i> (Pine needles), coprinus, fish scales, bacteria, dicot flower buds, <i>Planaria</i> , and fish gills.
1	Gram Staining Dyes and Supplies - kit contains all materials necessary to gram stain bacterial colonies and prepare for observation under oil immersion.
72	Brock Magiscopes - designed for younger students, these microscopes are very easy to operate, do not require electricity and are nearly indestructible. Magnifications of 20X and 50 X.
2	Camera for Microscopes - camera that connects to a microscope to display a slide on a television screen or project through a LCD projector.
4	Kinesthesia Cart - device for large scale demonstrations of Newton's Laws of Motion
10	Triple Beam Balance - used to determine masses of objects
8	Double Pan Balance (with metric masses) - elementary level, for introducing the concepts of weighing and balancing
5	Ohaus Scout II Electronic Balance - fast, portable electronic balances with a capacity of 200 grams
3	Acculab Analytical Balance - fast, portable electronic balances with (± 0.001 gram) precision
16	Spectrophotometer Spectronic 20 D Kit - used for measuring absorption of visible light energy in colored solutions (Appropriate for high school use)
4	Mel-temp Melting Point Apparatus (with digital thermometer) - used to determine the melting points of solids and the boiling points of liquids.
30	Spectrometer, Prism and Diffraction Glasses - used for studying the visible light spectrum
4	Portable Colorimeters - hand-held, filter-photometer instruments designed for on-site water testing of multiple parameters including nitrates, phosphates, dissolved oxygen and others. (Used in conjunction with or instead of the water testing kits listed below.)
4	Water Testing Kits - use color comparisons or drop count titrations to determine chemical concentrations of various compounds often found in water. Water testing sets include one kit each of the following: alkalinity, ammonia, carbon dioxide, chlorine, chromate, dissolved oxygen, hardness, nitrate, pH, and phosphate.
5	Dissolved Oxygen HACH Kits - Spare HACH kits that test the concentration of dissolved oxygen.
4	pH Cube HACH Kits - Spare HACH kits that test the acidity or alkalinity of water.
2	Stream Study Supplies - Materials for collecting data at a stream site, including nets, tape measures, stop watches, floating objects and flow meter
6	Accumet Model 15 Tabletop pH Meter - used to determine the strength of acids and bases using the pH scale, which ranges from 1 (strong acid) to 7 (neutral) to 14 (strong base).
12	Accumet Model AR15 Tabletop pH Meter - used to determine the strength of acids and bases using the pH scale, which ranges from 1 (strong acid) to 7 (neutral) to 14 (strong base).
1	Groundwater Simulation Model - device for displaying the movement of water underground

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1	Grow Light Rack - portable model with adjustable light for use in plant growing experiments
1	Enviroscape Wetlands Model - model to demonstrate how our daily activities, as well as industry and agriculture affect wetlands.
1	Enviroscape Drinking Water and Wastewater Treatment Model - model to demonstrate the path of water from source, to use, to treatment, then back to the river.
2	Water Cycle Model -Replicates the individual processes of the water cycle: evaporation, condensation, and precipitation. Broadens students' understanding of the water cycle and enhance awareness of the various states of water.
1	Weather Monitor Portable Weather Station - continuously monitors weather parameters such as temperature, air pressure, humidity, wind speed and direction; also comes with NOAA weather radio for additional data collection
1	Weather Instruments Delta Science Module - Materials and equipment for 10 weather- related activities, including barometric pressure, humidity and wind
1	Weather Station Software - software that allows weather data collected on the Portable Weather Station to be downloaded and analyzed
1	Macroinvertebrate Display -A collection of 21 preserved specimens to illustrate the stages of aquatic insects. Can be used in conjunction with stream study or insect study.
1	Leaf Pack Kit - create an artificial leaf pack and place in a stream or pond for 3 to 4 weeks. Examine in the classroom to evaluate the macroinvertebrate population. Identification keys included.
3	Electrophoresis gel box (with power supply) - for separation and analysis of DNA using current across an agarose gel
2	Microcentrifuge - device for separating solutions into solute and solvent
8	Column Chromatography Setup - C18 PrepSep disposable extraction columns separate mixtures of dyes
12	Stirring Hot Plate - combine heating capability with magnetic stirring
20	Topographic Map Kit - tool to demonstrate how contour maps are made
2	Van De Graaff Generator - device used for static electricity demonstrations
60	Basic Electricity Lab - kits for learning various electricity-related concepts, from simple circuits to basic electronics
8	Kill A Watt Electricity Usage Monitor - Displays 8 units of measure: volts, amps, watts, kilowatts, frequency, volt amps, power factor, elapsed time.
24	Digital Multimeter - able to measure voltage, resistance, and current
15	Earth - Moon - Sun Models - used to explore ideas of rotation, revolution, time, seasons, and moon phases
15	Rock/Mineral Classification Kits - rock samples and tests to classify rocks and minerals into groups
3	Incubator - used to promote the growth of micro-organisms
12	K'Nex Simple Machines Kits - versatile sets for learning about all the simple machines: levers, screws, wedges, wheels and pulleys, as well as gears (For grades 4 - 9)
30	Duplo Simple Machines Kits - for learning about levers, gears, wheels and pulleys (For grades K-3)

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8	K'Nex DNA Replication & Transcription Kits - build DNA and mRNA molecules as students learn about phosphate groups, deoxyribose and ribose sugars, hydrogen bonds, codons, nucleotides, and much more.
15	Anatomy Aprons - used for elementary students to learn about their internal organs
1	Introductory Brain Lab - used for K-4 students, multiple stations which look at the brain and its functions
1	Insect Lab Materials -used to learn the basic anatomy of an insect, the process of metamorphosis, and identification of insects using the dichotomous key.
1	Elementary Soil Lab -used outdoors to study various soil types and effects of compaction
5	Binoculars - 7 x 35mm Tascoe®
8	Alternative Fuel Model Cars - Solar and Hydrogen Cars demonstrate various energy changes and means of energy collection and storage.
	EcoBeaker HS Software - interactive software used to investigate ecological scenarios
15	Science Sleuths Software - interactive software used to investigate and solve mysteries.
	ArcView 9.2 Software - GIS software for desktop mapping and analysis of spatial information
1	Sound Kit - includes the materials for multiple stations to investigate different aspects of sound and its properties.
2	Magnet Kits - includes materials for multiple stations to investigate the forces of magnetism. Separate kits for grades k - 2 and 3 - 5.
4	Dinosaur Puzzles - used by elementary students to learn about dinosaurs and experience what it is to be a paleontologist.
1	Bell Jar Sound Demo - A bell, ringing in a bell jar, ceases to be heard as the bell jar is evacuated.
2	Solar Ovens
8	Simple Circuit Kits - Introduction to electrical circuits (K-5)
1	Tree Core Samples - Cross sections of various tree types
1	Wind Turbine
12	Genecon Hand Crank Generator
8	Digital Infrared Thermometers - measure temperatures from -50 to 400oC with this handheld device. Measure instantaneous readings, changing temps or scanning a surface.
	Note: The <i>Advancing Science</i> program can also provide a variety of "small" equipment, such as Thermometers, Compasses, Safety Glasses, Agar Plates, Hand lenses, Measuring tapes, Rulers, Timers, and Glassware to support the activities used in the program.
	**New items highlighted in gray