TITLE: Certification of Science Laboratory Equipment Sufficiency for Grades 9-12

NUMBER: REF-4799.1

ISSUER: Judy Elliott, Chief Academic Officer
Office of Curriculum, Instruction, & School Support

Esther Sinofsky, Director
Instructional Media Services

DATE: July 20, 2009

ROUTING
Local District Superintendents
Local District Administrators of Instruction
Local District Directors of High School Services
Local District Science Staff
High School Principals
High School Assistant Principals
Science Department Chairpersons
Science Lead Teachers
Science Teachers

PURPOSE: To provide instructions regarding certification of sufficient science laboratory equipment in Grades 9-12, and establish a list of basic required science equipment for these science classes.

MAJOR CHANGES: This Reference Guide replaces Ref. 4799.0 of the same title which replaced Bul-3868.0 dated November 2, 2007, in order to better clarify the implementation of *Williams* sufficiency regarding science laboratory equipment. The Principal's Certification form has been updated, Los Angeles County Office of Education (LACOE) requirements clarified and Advanced Placement (AP) courses added.

BACKGROUND: *Education Code* §60119 mandates that the governing board of every local educational agency (LEA) that receives State instructional materials funds must hold an annual public hearing before the end of the eighth week from the first day pupils attend school for that year. The eighth week is counted from the first A-track of the school year. At the public hearing, the governing board must make a determination as to whether each pupil in each school has sufficient textbooks or instructional materials, or both, that are aligned to the content standards and are consistent with the content and cycles of the curriculum framework adopted by the State Board of Education in reading/language arts/ELD, mathematics, science, history/social science, health (Grades 6-7 and 9), and foreign language (Grades 9-12). As part of this hearing, the governing board must also determine the availability of laboratory science equipment as applicable to science laboratory courses offered in grades 9 to 12, inclusive. Science instructional materials insufficiencies will be noted on the annual School Accountability Report Card (SARC).

INSTRUCTIONS: In order to document compliance with California *Education Code* §60119, an annual certification of science laboratory equipment for *Biology, AP Biology, Chemistry, AP Chemistry, Physics, and AP Physics* courses in Grades 9-12 is required of principals and Local District Superintendents.

School Principals will:

- Print the *Principal Certification of Science Laboratory Equipment Sufficiency* form from the Textbook Services website (http://textbookservices.lausd.net) under *Quick Links* or photocopy Attachment A. The certification of sufficiency form lists the core equipment for science laboratory classes in *Biology, AP Biology, Chemistry, AP Chemistry, Physics, and AP Physics* and should be used to assist in identifying any missing or insufficient science laboratory equipment. Additional components are not mandated for sufficiency.
- Resolve verified insufficiencies *before* completing the *Principal Certification of Science Laboratory Equipment Sufficiency* form.

  Investigate possible on-site resources to determine, for example, if equipment is in storage and not yet distributed.

  Investigate the possibility of borrowing surplus equipment from another school.

  Order replacement equipment.
- Sign the *Principal Certification of Science Laboratory Equipment Sufficiency* form. Mail, fax, or e-mail a copy of the completed *Principal Certification of Science Laboratory Equipment Sufficiency* form to your Local District by **Thursday** of the **second week** of instruction for each track.
- If there are unresolved insufficiencies, be prepared to explain at the public hearing the reasons for the insufficiencies. Principals of schools with insufficient science laboratory equipment must communicate to community stakeholders the reasons why there are insufficiencies and what action is being taken to remedy the insufficiency.

- Complete and submit the LACOE Science Lab Equipment Survey (Decile 1-3 high schools only) to LACOE by **Thursday** of the **second week** of instruction. Schools can download the *LACOE Science Lab Equipment Survey* at the LACOE Williams website: http://williams.lacoe.edu. The surveys may be submitted to LACOE through the abovementioned website or by FAX at (562) 803-8325.

Local District Superintendents will:

- Review each school's *Principal Certification of Science Laboratory Equipment Sufficiency* forms (Attachment A) for insufficiencies and maintain a file of all the forms for two years.
- Send the *Local District Superintendent Certification of Science Laboratory Equipment Sufficiency* form (Attachment B), along with a copy of the *Principal Certification of Science Laboratory Equipment Sufficiency* forms (Attachment A), to Textbook Services on or before **Tuesday** of the **third week** of instruction of each track, via school mail.

At the public hearing, a list of schools with certified insufficiencies and the action being taken to remedy the insufficiencies will be presented to the Board.

In addition to the *Certification of Science Laboratory Equipment Sufficiency* forms, all high school Science Departments should inventory their stockrooms to ensure sufficiency of core supplies for the core science courses of *Biology*,*AP Biology*, *Chemistry*,*AP Chemistry*, *Physics*, and *AP Physics*, by the end of the **first week** of instruction for each track. Attachments C, D, and E provide convenient templates of the core supply lists for science stockrooms.

TIMELINES:

- *Principal Certification of Science Laboratory Equipment Sufficiency* forms are due to the Local District Office by **Thursday** of the **second week** of instruction.
- *LACOE Science Lab Equipment Surveys* are due to LACOE by **Thursday** of the **second week** of instruction (Decile 1-3 Only).
- Local District Superintendents must return the *Local District Certification of Science Laboratory Equipment Sufficiency* form to Textbook Services (Attachment B) along with the *Principal Certification of Science Laboratory Equipment Sufficiency* forms (Attachment A) to Textbook Services no later than **Tuesday** of the **third week** of instruction for each track.

ASSISTANCE: For questions related to science laboratory equipment for Grades 9-12, contact your Local District *Williams* point person:

LD	CONTACT	PHONE
iDesign	Christina Esquerra	(213) 241-2472
1	Marla Mondheim	(818) 654-3600
1	Margaret Nelson	(818) 654-3729
1	Edwin Hayek	(818) 654-3600
2	Debra Mcintyre-Sciarrino	(818) 755-5414
2	Sandra Winchell	(818) 755-5300
3	Angela Hewlett-Bloch	(310) 253-7139
3	David Victorin	(310) 253-7832
4	Philip Naimo	(323) 932-2283
4	Byron Maltez	(323) 932-2272
5	Myra Fullerton	(323) 224-3127
5	Yvonne LaMarre	(213) 247-8575
6	Lynne Uyehara	(323) 567-1261
6	Theresa Lopez	(323) 278-3940
7	Cecilia Duenas	(323) 242-1412
7	Taneda Hailey	(323) 242-1385
8	Dona Stevens	(310) 354-3419
8	Pamela Jackson	(310) 354-3422

This form is due to the Local District Office no later than Thursday of the second week of instruction for each track.

Principal Certification of Science Laboratory Equipment

School: _____ Loc. Code: _____
Principal's Name: _____ Local District: _____

A separate form must be completed for each track. Check appropriate:

☐ Traditional ☐ A Track ☐ B Track ☐ C Track ☐ D Track

I certify that the **Biology**, **AP Biology**, **Chemistry**, **AP Chemistry**, **Physics** and **AP Physics** classes have sufficient core laboratory equipment at the above named school.

☐ Yes, my school HAS Sufficient Science Laboratory Equipment

I am declaring that the the above named school does NOT have sufficient core laboratory equipment in its **Biology**, **AP Biology**, **Chemistry**, **AP Chemistry**, **Physics and AP Physics** classes.

☐ No, my school does NOT have sufficient Science Laboratory Equipment

Please determine the ratio of students per class section to each piece of laboratory equipment. For example: a ratio of 6 students per class section per microscope would mean a minimum of 6 microscopes for a class section of 36. Once the ratio has been determined, please enter it in the starred, shaded columns below.

SCIENCE LAB COURSE TITLE	List Science Laboratory Equipment required for student use for each Science Course	*Total Number of Equipment Per Class Section	*Maximum Number of Students Per Equipment Per Class Section	Number of Insufficient Equipment ALL SECTIONS	Number of students Impacted ALL SECTIONS without Equipment	Total Enrollment ALL SECTIONS
BIOLOGY/AP BIOLOGY	*Bio A-Microscopes*					
	Bio A-Pan Balances					
	Bio A-Graduated Cylinders					
	Bio A-Bunsen Burners and Ring Stands					
CHEMISTRY/AP CHEMISTRY	*Chem A-Hot Plates*					
	Chem A-Bunsen Burners and Ring Stands					
	Chem A-Pan Balances					
	Chem A-Graduated Cylinders					
PHYSICS/AP PHYSICS	*Physics A-Pan Balances*					
	Physics A-Rulers Metric English					
	Physics A- Graduated Cylinders					

Principal's Signature: _____ Date: _____

Los Angeles Unified School District
INTEROFFICE CORRESPONDENCE

REF-4799.1 ATTACHMENT B
July 20, 2009

TO: Judy Elliott, Chief Academic Officer
Office of Curriculum, Instruction & School Support

FROM: _____, Superintendent

Local District: _____

SUBJECT: **LOCAL DISTRICT SUPERINTENDENT CERTIFICATION OF SCIENCE LABORATORY EQUIPMENT**

This form must reflect certification for each track (check all those that apply below). Return this certification to Textbook Services by **Tuesday** of the **third** week of instruction for each track. **Attach the principal certifications of Science Laboratory Equipment for each school for the corresponding track.**

Select School Calendar: ☐Traditional ☐A Track ☐B Track ☐C Track ☐D Track

☐ The schools in Local District _____ **have sufficient Science Laboratory Equipment.**

OR

☐ The schools in Local District _____ **DO NOT have sufficient Science Laboratory Equipment.**

I further certify that, within Local District _____, all principals have been directed to ensure that every student in the Science courses of *Biology*, *Chemistry* and *Physics* has sufficient amount of Science laboratory equipment as defined by the *Science Laboratory Equipment Survey*.

_____ Date: _____
Local District Superintendent's Signature

Return to Esther Sinofsky by fax (213) 413-4059 or via school mail to Instructional Media Services, Adams Plaza, Suite 200, no later than **Tuesday** of the **third week** of instruction for each track.

REF-4799.1
July 20, 2009

ATTACHMENT C

BIOLOGY CORE INSTRUCTIONAL MATERIALS LIST

BUDGET YEAR: AREA: _____

WAREHOUSE: DELIVERY DATE: _____/_____/_____

REQ ORG: DELIVER TO ALTERNATE ADDRESS:

REQ BY: PHONE:

COMMENTS: _____

ACCOUTING: AREA ORG. / SUB. PROG. OBJ. / SUB.

APPROVAL: _____ DATE: ___/___/___ FAX: (___) _____

Quantity	Unit	Description
2	PK	BEAKER: 50 ml, a package of 12 unit, double gradusted metric scales, uniform wall thickness, have a triangular marking spot
2	PK	BEAKER: 150 ml, a package of 12 unit, double gradusted metric scales, uniform wall thickness, have a triangular marking spot
2	PK	BEAKER: 250 ml, a package of 12 unit, double gradusted metric scales, uniform wall thickness, have a triangular marking spot
2	PK	BEAKER: 600 ml, a package of 6 unit, double gradusted metric scales, uniform wall thickness, have a triangular marking spot
2	PK	BEAKER: 1000 ml, a package of 6 unit, double gradusted metric scales, uniform wall thickness, have a triangular marking spot
40	EA	BOTTLE AND CYLINDER BRUSH: 51 cm long, bottles, cylinders easily cleaned. The brush area is 6 cm diax15 cm
10	EA	BUNSEN BURNERS: Tirrill Burners, natural gas
1	EA	BURNER CONNECTOR TUBING: 91 cm
5	EA	CLAMP(Ring): Support ring w clamps, Inside dia 2-5/8inch,outside dia 3-1/4
5	EA	CLAMP(Ring):Support ring w clamps, Inside dia 3-5/8inch, outside dia 4-1/4
4	PKG	CLAMP: test tube, ideal for student use as it holds test tubes up to 25 mm firmly
1	EA	CORK: Size 0 to 11, pkg of 100
10	EA	Cover Slips: Plastic cover glasses, 22 cm in square, pkg/100
1	PKG	DISPOSABLE BOX: Glass disposable box, floor size, pkg/6, 45cmx30cmx54cm

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ATTACHMENT D

Quantity	Unit	Description
1	EA	FLASKS: 250 ml, erlenmeyer, borosilicate, pkg/48
1	EA	FLASKS: 500 ml, erlenmeyer, borosilicate, pkg/36
2	EA	FUNNELS: short stem funnels, 58^{o} kimax, pkg/12, top dia 65 mm, filter size 11cm
2	EA	FUNNELS: standard stem,60^{o} polypropylene, pkg/12, top dia 65 mm, filter size 11cm
40	EA	GOGGLES: Safety, Blue, specs of ANSI Z87.1-1989 and CSA Z94.3-1988
2	EA	GRADUATED CYLINDER: 10 ml, glass, pkg/12, single scale
4	EA	GRADUATED CYLINDER: 500 ml, polypropylene, pkg/6, single scale
5	EA	GRADUATED CYLINDER: 1000 ml, polypropylene, pkg/4, single scale
2	EA	PETRI DISHES: pkg/500, disposable, sterile, polystyrene, 100x15 mm
4	EA	PIPETS: Disposable, plastic, graduated, 500/pkg, 150mmx5mm(length x dia), 25 drops per ml, 3.1 ml bulb draw
1	PKG	WASH BOTTLES: Wide mouth, polyethylene, 500 ml, pkg/4
20	EA	RING STANDS: Support stands w rods, 51 cm
1	LB	RUBBER STOPPERS: Size 1, Solid, 1 lb
1	LB	RUBBER STOPPERS: Size 1, one hole, 1 lb
3	PK	CHEMICAL TEST TUBES: Test Tube, Pyrex, 20 mm x 150 mm, 34 mL, Corning, 72/pkg
6	PK	CHEMICAL TEST TUBES: Test Tube, Pyrex, 13 mm x 100 mm, 9 mL, Corning, 72/pkg
20	EA	TEST TUBE RACK: Double row, wood, 12 22mm tubes
20	EA	THERMOMETER: Alcohol,
4	EA	WATCH GLASSES: 64 mm dia, pkg/12
2	EA	FLASKS: Florence, 250 ml, pkg/6
2	EA	FLASKS: Florence, 500 ml, pkg/6
6	EA	LENS PAPER

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ATTACHMENT D

Quantity	Unit	Description
1	EA	FLINN GOGLE SANITIZER, holds 36 goggles
5	BT	METHYLENE BLUE BIOLOGICAL STAIN: (Methylene Blue Chloride)500 mL, 1.0% Aqueous Solution, Basic Blue 9
1	BT	PHENOLPTHALEIN SOLUTION, 1000 ml
1	BT	STARCH: Soluble, Reagent Grade,L 1 L, 1.0% Aqueous
1	BT	IODINE: Iodide (KI) Solution, 500 mL, Lugol Solution
18	EA	DIALYSIS TUBING: 25mm (1") flat
3	PK	DIALYSIS TUBING HOLDER: 6/pkg
2	EA	GLASS STIRRING RODS: 5mmx200mm, pkg of 10
1	EA	OHAUS 200gr SPE202 Electronic balance
15	EA	MICROSCOPE

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July 20, 2009

ATTACHMENT E

CHEMISTRY CORE INSTRUCTIONAL MATERIALS LIST

BUDGET YEAR: AREA: _____

WAREHOUSE: DELIVERY DATE: _____/_____/_____

REQ ORG: DELIVER TO ALTERNATE ADDRESS:

REQ BY: PHONE:

COMMENTS: _____

ACCOUTING: AREA ORG. / SUB. PROG. OBJ. / SUB.

APPROVAL: _____ DATE: ___/___/___ FAX: (___) _____

Quantity	Unit	Description
10	EA	BUNSEN BURNERS: Tirrill Burners, natural gas
1	EA	BURNER CONNECTOR TUBING: 91 cm
1	CS	BEAKER: 50 ml, borosilicate glass, a case of 48 unit
1	CS	BEAKER: 150 ml, borosilicate glass, a case of 48 unit
1	CS	BEAKER: 250 ml, borosilicate glass, a case of 48 unit
1	CS	BEAKER: 600 ml, borosilicate glass, a case of 36 unit
1	EA	BEAKER: 1000 ml, borosilicate glass, a package of 6 unit
1	EA	BEAKER: 2000 ml, borosilicate glass, a package of 4 unit
1	PKG	CORKS: size 0-9, pkg 100
20	EA	CRUCIBLE AND COVER: porcelain high form, 30mL capacity
16	EA	CRUCIBLE HOLDER: Use w 25 ml Gooch crucible, Walter
2	PKG	CYLINDER: 100 ml,, polymethylpentene plastic, nalgene, pkg/12
2	PKG	CYLINDER: 10 ml, borosilicate glass, plastic base, pkg/12
2	PKG	CYLINDER: 25 ml, borosilicate glass, plastic base, plastic cylinder guard, pkg/12

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ATTACHMENT E

Quantity	Unit	Description
2	PKG	CYLINDER: 50 ml, borosilicate glass, plastic base, plastic cylinder guard, pkg/12
2	PKG	CYLINDER: 100 ml, borosilicate glass, plastic base, plastic cylinder guard, pkg/12
2	EA	CYLINDER: 500 ml, borosilicate glass, hex base, plastic cylinder guard
2	EA	CYLINDER:1000 ml, borosilicate glass, hex base, plastic cylinder guard
4	PKG	FLASKS: erlenmeyer pyrex, 50ml, stopper number 1, pkg 12
2	PKG	FLASKS: erlenmeyer pyrex, 125ml, stopper number 5, pkg 12
2	PKG	FLASKS: erlenmeyer pyrex, 250ml, stopper number 6,pkg 12
2	EA	FLASKS: erlenmeyer pyrex, 500ml, stopper number 7
2	EA	FLASKS: erlenmeyer pyrex, 1000mlstopper number 9
2	EA	FLASKS: erlenmeyer pyrex, 2000ml, stopper number 10
1	EA	FLASKS: erlenmeyer pyrex, 4000ml stopper number 10
3	EA	FLASKS: filtering w side arm, pyrex, 500 ml, pkg of 6
1	EA	FLASKS: boiling, flat bottom, short neck, florence, pyrex, 250 ml
1	EA	FLASKS: boiling, flat bottom, short neck, florence, pyrex, 500 ml
1	EA	FLASKS: boiling, round bottom, short neck, ring neck, 250 ml
1	EA	FLASKS: boiling, round bottom, short neck, ring neck, 500 ml
1	EA	FLASKS: Volumetric, 500 ml, kimax
1	EA	FLASKS: Volumetric, 100 ml, kimax
1	EA	FLASKS: Volumetric, 1000 ml, kimax
16	EA	FUNNELS: Büchner funnel, polypropylene, 5.5 cm, with filter Support Collar or stopper
1	CS	FUNNELS: Short stem, 75 mm dia, 48/case, pyrex
2	EA	FUNNELS: Long stem, 65 mm dia, pyrex

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ATTACHMENT E

Quantity	Unit	Description
2	EA	FUNNELS: Short stem, 100 mm dia,pyrex
1	EA	FUNNELS: Separatory, 125 ml, pyrex
8	EA	FUNNEL HOLDER: holds 4 funnels
1	EA	PARAFILM:4"
10	EA	MORTAR AND PESTLES
20	EA	RACK: test tube, plastic,
16	EA	RING STAND: 6" X 9", rod screws into base
1	LB	STOPPER: Black, assorted sizes 1-6, 1 lb
1	LB	STOPPER: #2, solid, 1 lb
1	LB	STOPPER: #2, 2 hole, 1 lb
1	LB	STOPPER: #00, 2 hole, 1 lb
2	EA	SCOOPS: stainless steel without handle, 61/2" long overall, pkg/12
10	EA	SPATULA, micro
4	EA	TEST TUBES: 13x100 mm, pkg/72, capacity 9 ml
2	EA	TEST TUBES: 18x150 mm, pkg/72, capacity 27 ml
1	EA	TEST TUBES: 25x150 mm, pkg/72, capacity 55 ml
1	EA	TEST TUBES: 25x200 mm, pkg/48, capacity 70 ml
1	EA	ABSORBANT: Chemical Spill

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ATTACHMENT F

PHYSICS CORE INSTRUCTIONAL MATERIALS LIST

BUDGET YEAR: AREA: _____

WAREHOUSE: DELIVERY DATE: _____/_____/_____

REQ ORG: DELIVER TO ALTERNATE ADDRESS:

REQ BY: PHONE:

COMMENTS: _____

ACCOUTING: AREA ORG. / SUB. PROG. OBJ. / SUB.

APPROVAL: _____ DATE: ___/___/___ FAX: (___) _____

Quantity	Unit	Description
15	EA	ammeter, dual range 0-1amp and 0-5amp for student use
2	EA	animal fir for electrostatics demonstrations
15	EA	cart, Halls (4 aluminum low friction wheels, total length 6")
15	EA	clamp, buret (fits up to 3/4" rod, opens 1/2" to 1 3/4")
30	EA	clamp, right angle rod clamps, 9/16" one end 1/2" other, Cast iron 1/4" thumbscrew
7	EA	clamp, Adjustable as to angle, fits rods up to 5/8", Aluminum
15	EA	collision in two dimension kit (track, balls-2steel,1 glass, 1wood)
15	EA	compass, magnetic
1	EA	cord for pulley systems, nylon 0.5mm 45m roll (must be braided)
2	Set/25	diffraction gratings, slide mount sets of 25
3	PK/12	dishes, semicircular or "D" for refraction experiments(pkg/12)
1	Each	Electroscope, metal (simple aluminum leaf with ball on top)
1	Each	electrostatics, basic demonstration materials kit

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Quantity	Unit	Description
2	set/8	electrostatics, student materials kit for 8 lab stations
1	EA	file, flat metal, course
1	EA	file, triangular
1	BT	glue, woodworking (8 oz bottle)
1	Tube	glue, general purpose (like Duco) (Approx 3 oz. tube)
15	EA	graduated cylinders (500 ml), polypropylene
1	EA	Hammer, claw
0	EA	hot plate, (inexpensive for general heating)
5	EA	laser, small pointer (priced in lots of 10 or more,)
15	Set/5	leads, alligator clips both ends assorted colors (set of 5)
15	EA	light bulb bases (plastic with 2 brass terminals)
6	PK/10	light bulb, small (1.5V) flashlight. (Package of 10)
6	PK/10	light bulb, small (2.5V) flashlight. (Package of 10)
6	PK/10	light bulb, small (3.8V) flashlight. (Package of 10)
1	BX	machine screws (round head brass 8-32 x 1") Box of 100
1	BX	machine screws (round head brass 6-32 x 3/4") Box of 100
30	EA	meter stick, wood 1 meter x 5/16" x1"
15	EA	mirrors, flat (approx 2 x 6")
1	EA	Newton's cradle "collision balls"
1	BX	Nuts, brass (6-32) box of 100
1	BX	Nuts, brass (8-32) box of 100
15	EA	pendulum balls steel plated, hook, 1"diameter

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Quantity	Unit	Description
15	EA	pendulum clamp supports 3 on vertical 5/8" rod
1	EA	pliers, linemans
1	EA	pliers, long nose
1	EA	pliers, slip joint
1	EA	pliers, wire cutting (mini diagonal 3 1/2")
1	EA	power supply, regulated (13.8V at 5A max. Overload protected)
7	EA	power Supply, DC, 6 way (3,4.5,6,7.5,9,12VDC) @2amps
30	EA	protractors, plastic 6" semicircular
30	EA	pulley, single
15	EA	pulley, w/clamp over edge
7	EA	rod, glass, approx 1/2" dia 12" long, for electrostatics expts.
7	EA	rod, hard rubber (or vulcanite) for electrostatic experiments
7	EA	rod, plastic, approx 1/2" dia 12" long, for electrostatics expts.
15	EA	rod and support, A-Nesting Support bases, rod 3/8" x 23"
15	EA	rod with table top clamp, (rod 3/8" diameter X 20" high, Clamp opening 1 5/8")
15	EA	rods, steel support 3/8" x 24" (Thread compatible with A support)
3	PK/12	rulers, metric and English, wood (pkg/12)
1	EA	saw, crosscut
1	EA	saw, hack
30	EA	scale, spring for student use 2000g/20N
2	EA	scale, spring, demonstration, 20N in 0.5N divisions
1	Set	screwdriver set (three Phillips and three flat blade)

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ATTACHMENT F

Quantity	Unit	Description
1	EA	Solder stand, Spring steel holder with cleaning pad
	EA	solder, 60/40 1/2 pound roll .032" Dia
1	EA	soldering iron, 30 Watt for electronic work
2	Kit/24	spectrometer set, simple grating in tube and slot, kit for 24 students
1	EA	sphere, 7" aluminum on pvc rod for electrostatic demos
2	EA	stopper, rubber #?? to fit 500ml flask for accelerometer
4	EA	stopper, rubber (#5) with one hole (on string for demonstration)
15	EA	stopwatches, LCD digital readout, uses SR41 battery
1	PK/100	styrofoam cups, large approx 2 cup size, box of 100 or so, $ guess
1	PK/100	styrofoam cups, large (about 1 pint each) prob. in boxes of 100
1	Roll	tape, black electrical 3/4" 250" roll
15	EA	thermometers 120--110C(partial Immersion "BASIX" student grade)
2	Set/8	tuning forks, set of 8, 256hz--512hz, physical scale octave
1	EA	Van der Graaff generator, 18cm globe on plastic base
15	EA	voltmeter, DC Triple 0-3V, 0-10V, 0-15V (for student use)
1	BX	washers, brass (#6), box of 100
1	BX	washers, brass (#8), box of 100
4	EA	Wave demonstrator set, "slinkey" (3' x 4"), snake (3/4" x 72")
7	EA	weight set, hooked 7 weights 10g--1Kg in plastic holding block
1	EA	wire strippers
1	EA	wrench, adjustable open end, 10"