

## List of Equipment for the Ninth Edition of *IPS*

ITEM	NUMBER NEEDED
Air Puck Kit	12
Air puck platform	12
Balance, equal-arm	1
Balance, single-pan <u>or</u> electronic	12 2
Beaker, 100 mL	12
Beaker, 250 mL	12
Black box (set of 24)	1
Bottle, plastic, 500 mL (for burner fuel)	2
Bottle, plastic, 500 mL (soft drink)	12
Bottle, plastic, 2 L (soft drink)	12
Boyle's Law Apparatus	1
Bromine Tubes Set	1
Brush, nylon, test tube	12
Bubble level (or leveling cell phone app)	1
Burner stand	12
Cart platform	1
Cart superstructure	1
Cart with low-friction bearings	1
C-clamp, 4-6"	12
Cloud Chamber Set	1
Conservation of Mass Kit	12
Container, plastic, rectangular (approx. 10" × 6" × 4" deep)	12
Crucible, size 00, porcelain	12
Cylinder, graduated, 10 mL	12
Cylinder, graduated, 50 mL	12
Cylinder set, equal volumes/different masses	12

ITEM	NUMBER NEEDED
Dice, common game size	144
Evaporating dish, porcelain, size 000	12
Electrolysis electrodes (stainless steel)	12
Energy wheel kit, with accessories	1
Fasteners and Rings Package	12
Fire syringe	1
Force Kit	12
Frictional Force Apparatus	12
Funnel, plastic, 65 mm × 65 mm	12
Geiger counter <u>or</u> computer-interfaced radiation monitor	1
Gram mass set, 50 g × 100 mg	1
Graphing software (such as <i>KaleidaGraph</i> <sup>TM</sup> )	1
Gravitational Potential Energy Kit	12
Hammer	1
High-voltage source (for spectrum tubes)	1
Light bulb, incandescent	1
Low-friction pulley with clamp	1
Magnetic Force Apparatus	12
<i>Mass of Atoms</i> film (VHS or DVD)	1
Metal Cube and Slab Set	12
Meter stick	1
Metric rulers, 30-cm	24
Microburners <u>or</u> Alcohol burners	12 24
Molecular Motion Model	1
Molecular Size and Mass Kit (with lycopodium powder and oleic acid)	1
Motion detector and computer interface	1
Pegboard Kit (with 4 small & 3 large clamps)	12
Power supply, 6 to 12 V <u>or</u> 6-V batteries	12 24

ITEM	NUMBER NEEDED
Razor blade, single-edge or X-Acto™ knife	1
Rope (6 m or more in length)	1
Safety glasses	24
Scissors	4
Scoopula, stainless steel	12
Weight set, hooked (10 g, 2 × 20 g, 50 g, 100 g, 2 × 200 g, 500 g, 1000 g)	1
Spectral Analysis Kit (15 spectroscopes, nichrome wire, handles, chemicals)	1
Spectrum tubes	Assorted
Spring scale, 20-N	36
Spring scale, 5-N	12
Stirring rods, glass, 5 mm × 150 mm	12
Stoppers, rubber, No. 2, Solid	36
Stoppers, rubber, No. 2, 1-hole	48
Stoppers, rubber, No. 4, 1-hole	12
Stoppers, rubber, No. 4, 2-hole	12
Stopwatch	12
Test tube, 20 mm × 150 mm, heat-resistant glass	72
Test tube, 25 mm × 150 mm, heat-resistant glass	72
Test tube rack	12
Thermometer, immersion, high resolution, 10°C to 40°C	12
Thermometer, immersion, standard, -10°C to +110°C	24
Tray, plastic, black, 40 cm diameter	12
Triangle, clay, 2-in. wire pipe stem	12
Tubing, rubber, black, 3/16" I.D., 3/8" O.D.	36 ft
Tubing, glass, right angle bend, 6-mm O.D. with approx. 3-cm arms	12
Vacuum cleaner	1
Washer, large, 1 3/4" O.D. × 3/4" I.D.	12
Wire leads with alligator clips	24



## List of Chemicals and Consumables

ITEM	CHAPTER USED															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Alcohol, ethanol, denatured, 95%, 1 gal.	x	x	x	x	x	x		x								
Alcohol, isopropanol, USP 99%, 1 pt			x	x	x											
Alka-Seltzer™, 4 dozen tablets		x	x	x												
Aluminum foil, heavy duty, 1 roll							x				x					
Aluminum foil, regular, 1 roll							x				x					
Baking soda, 1-lb package	x			x												
Balloons, round															x	
Rubber bands		x				x										
Batteries, 6V (24) (if used instead of power supply)						x			x	x						
Boiling chips			x		x											
Cardboard pieces (10 cm × 10 cm or larger)															x	
Citric acid, granular, hydrous, USP, 100 g				x												
Copper dust, purified electrolytic, 100 g						x										
Copper strips or electrodes, 1 pkg										x						
Copper, fine granules, reagent, 100 g		x														
Copper(II) acetate monohydrate, reagent, 150 g				x												
eyedropper										x	x					
Epsom salt (magnesium sulfate) USP, 100g			x													
Fishing line, 30-lb test													x			x
Glycerin (glycerol) USP, 1 pt	x		x		x											

ITEM	CHAPTER USED															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Heat sink compound													×			
Wrapping paper, heavy															×	
Hydrochloric acid, concentrated, reagent, 1 pt						×						×				
Ice cubes												×	×			
Magnesium ribbon												×				
Matches	×	×	×		×	×		×								
Paper, 2-cm tape, chromatographic, Whatman #1, 1 roll					×											
Paper, filter, 12.5 cm, Whatman #1, box of 100					×											
Pens or markers, water-soluble, green, red, black					×								×			
TOP, 4-(tert-octyl) phenol, 250 g			×	×												
BHT, 2,6-di-tert-butyl-4-methyl-phenol, 250 g			×													
Milk bottles, plastic, gallon													×			
Potassium nitrate, granular, USP, 500 g				×												
Potassium dichromate, granular, USP, 150 g				×												
Sand, washed, 1 kg	×															
Bags, plastic, sealable, sandwich size													×			
Sheets, latex, 5 cm × 5 cm, 12 sheets		×														
Sodium carbonate, monohydrate, USP, 1 kg						×										
Sodium chloride, fine, USP, 500 g		×		×	×											
Sodium nitrate, granular, purified, 100 g				×												
Starch solution										×						
Steel wool, 1 pad										×						

ITEM	CHAPTER USED																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Straws																x	
String or heavy thread												x					
Cups, Styrofoam™												x					
Sugar, granulated, 200g				x	x												
Sulfur, powder, USP, 250 g		x			x												
Tape, masking																	x
Tea	x																
Wood splints, approx. 12 cm long						x											
Zinc, commercial, 0.05 cm × 1 cm × 1 cm, 100 squares						x											
Zinc iodide, 98%, 50 g										x							