

# Chemistry in the Environment— Master Materials Guide



(for a class of 30 students working in pairs)

## Experiments and Demonstrations

Chemicals	Flinn Scientific Catalog No.	Physical and Chemical Properties of Soil	pH and the Alkalinity of Water	How Hard Is Your Water?	Air Pollution Investigation	Build a Solar Cell	Dissolved Oxygen Testing	Cleaning Water with Alum	Acid Rain in a Bag	Buffering of Lakes and Streams	Oji Spill Cleanup	Cleaning Up with Iron
Aluminum potassium sulfate	A0265						2 g					
Ammonium chloride	A0266			1 g								
Ammonium hydroxide (conc), 14.8 M	A0174			6 mL								
Ammonium hydroxide solution, 1 M	A0097						5 mL					
Bromthymol blue indicator solution, 0.04%	B0173				50 mL							
Calcium nitrate, tetrahydrate	C0349			1 g								
Calgon™	S0430	1 g										
Calmagite	C0002			1 g								
Copper, wire	C0148				1			1 cm				
EDTA, disodium salt, dihydrate	E0044			1 g								
Enviro-Bond™ 403	E0058										20 g	
Eosin Y	E0023	1 g										
Ethyl alcohol, 95%	E0009	500 mL										
Hydrochloric acid (conc), 12 M	H0031		9 mL									
Hydrochloric acid solution, 1 M	H0013				1 mL							
Indigo carmine	I0047											1 g
Iron, powder	I0013											8 g
Marble chips	M0032				30 g				150 g			
Marvel Mystery Oil®	AP8927										30 mL	
Methylene blue	M0072	1 g										
Methylene blue indicator solution, 1%	M0074											1 mL
Methyl orange indicator solution, 0.1%	M0078		50 mL									
Nitric acid solution, 6 M	N0048							1 mL				
Sand, fine	S0003	500 g						15 g				
Sodium thiosulfate, pentahydrate	S0114						1 g					
Starch, potato	S0122						5 g					
Sulfuric acid (conc), 18 M	S0228						45 mL					
Sulfuric acid solution, 0.1 M	S0419								1 mL			
Universal indicator solution	U0009							4 mL	2 mL			
Vinegar, white	V0005	20 mL										
Winkler's solution #1	W0010						50 mL					
Winkler's solution #2	W0011						50 mL					
Yeast, Baker's	Y0008				1							

# Chemistry in the Environment— Master Materials Guide



(for a class of 30 students working in pairs)

## Experiments and Demonstrations

	Flinn Scientific Catalog No.	Physical and Chemical Properties of Soil	pH and the Alkalinity of Water	How Hard Is Your Water?	Air Pollution Investigation	Build a Solar Cell	Dissolved Oxygen Testing	Clearing Water with Alum	Acid Rain in a Bag	Buffering of Lakes and Streams	Oil Spill Cleanup	Cleaning Up with Iron
<b>Glassware</b>												
Beakers												
50-mL	GP1005	42										
100-mL	GP1010		15									
150-mL	GP1015					2						
400-mL	GP1025		15						2			
600-mL	GP1030							2			1	
Burets, 25-mL	GP1089		15									
Culture dish, large	AB1265										1	
Erlenmeyer flasks												
125-mL	GP3040						15					
250-mL	GP3045		30				15					
500-mL	GP3050											2
Glass demonstration tube	GP9146									1		
Graduated cylinders												
10-mL	GP2005	7								1		
25-mL	GP2010						15					
100-mL	GP2020		15									
Pasteur pipets	GP7042						15					
Petri dishes	GP3019					8						
Stirring rods	GP5075					8		1		1		2
Test tubes												
16x125 mm	GP6065	35										
20x150 mm	GP6068						15					
20x150 mm, with caps	GP9158				15							
<b>General Equipment and Miscellaneous</b>												
Bottle, square, plastic, 60-mL	AP4527											2
Build A Solar Cell Kit*	AP6916					2						
Ceramic square	AP1245					2						
Clamp, buret, plain jaw	AP8354	28	15							1		
Cotton balls	FB0680										1	
Cotton swabs	AP1737					8						

\*Build A Solar Cell Kit, AP6916 contains dried hibiscus, ethyl alcohol, iodine/potassium iodide electrolyte solution, nitric acid solution, titanium oxide, lens paper, tealight candle, binder clips, and electrical conducting glass.

# Chemistry in the Environment— Master Materials Guide



(for a class of 30 students working in pairs)

## Experiments and Demonstrations

	Flinn Scientific Catalog No.	Physical and Chemical Properties of Soil	pH and the Alkalinity of Water	How Hard Is Your Water?	Air Pollution Investigation	Build a Solar Cell	Dissolved Oxygen Testing	Clearing Water with Alum	Acid Rain in a Bag	Buffering of Lakes and Streams	Oil Spill Cleanup	Cleaning Up with Iron
<b>General Equipment and Miscellaneous, continued</b>												
Drinking straws	AP6025										1	
Forceps	AP8328					8						
Hot plate	AP4674					2						
Magnifying glass	AB1134			15								
Microscope slides, glass	ML1381			50	8							
Mortar and pestle	AP6066				2							
Multimeter	AP9000				2							
Nitrate in Water Test Kit*	AP6139	1										
pH test paper, narrow range, 3.0 to 5.5	AP325				1 roll			optional				
pH test paper, narrow range, 6.0 to 8.0	AP335		1 roll									
pH test paper, narrow range, 8.0 to 9.5	AP358		1 roll									
pH of Water Test Kit*	AP6141	1										
Phosphate in Water Test Kit*	AP6140	1										
Pipets, Beral-type, graduated	AP1721	35	15	30	45	24	45	1	3		2	
Pipets, Beral-type, micrtip	AP1719			15								
Reaction plates, 24-well	AP1447			15	15			1				
Rubber stoppers, assorted sizes	AP2320	21					30					
Ruler, metric	AP1872	7			15							
Spatula	AP8338	14				8						1
Spoons, plastic	AP9285										1	
Support stand	AP8226	14	15						1			
Syringes, 3-mL	AP1728			15								
Syringes, 10-mL	AP1730				15		15					
Syringes, 60-mL	AP8754	28										
Test tube rack	AP1319	7					15					
Thermometers	AP6049						15					
Toothpicks, plastic	AP1810			75								
Tubing, plastic, 1/8 inch I.D.	AP8373				3 ft							
Vials, Snap-Seal™	FB0015	7										
Wash bottle	AP1668	7	15	15			15					
Weighing dishes	AP1278										2	

\*Color comparison charts are included with Nitrate in Water Test Kit (AP6139), Phosphate in Water Test Kit (AP6140), and pH of Water Test Kit (AP6141)