

Equipment and Supplies

A list of equipment and supplies for all the experiments is given below. The amounts listed are for a class of up to 30 students working in groups of two, three, or four students in a classroom equipped with eight stations. The materials have been divided into **nonconsumables**, **consumables**, and **chemicals**. Most consumables and chemicals will need to be replaced each year. Most nonconsumable materials may be used many years without replacement. Some substitutions can be made.

Nonconsumables

Item	Amount	Experiment
balance	1	29
battery, D-size	16	31
battery holder, for 2 D-size batteries	8	31
beaker, 50 mL	16	9, 22
beaker, 100 mL	16	14, 21, 23, 25
beaker, 250 mL	16	1, 9, 12, 15, 22, 24
beaker, 400 mL	8	5, 10, 18
beaker, 600 mL	24	12
bottle, Nalgene, 250 mL	8	14
bottle, sampling, 500 mL	32	5
bottle, spray	2	13
bowl	8	4
bulb, incandescent, clear (150 W)	8	4, 6, 8
can, metal	8	7
capacitor, 10 μ F non-polarized	8	31
clamp, dialysis tubing	16	10
clamp, plastic tubing	16	13
clamp, right angle	16	30
clamp, utility	16	6, 7, 8, 10, 11, 13, 18, 22, 23, 24, 25
connecting wires	32	31

Appendix E

cup, 12 oz. plastic	8	5
dynamics cart	16	28
fan	2	13
floodlight, 100 watt	8	13
globe	8	8
goggles	class set	9, 10, 11, 12, 20, 21, 22, 23, 24, 25
graduated cylinder, 10 mL	8	12, 18, 21
graduated cylinder, 50 mL	8	9
heater, small electric	2	13
keyboard, electronic, music (optional)	8	32
lab apron	class set	9
lamp	8	4, 6, 8, 13
magnet, bar	8	2
mass set	8	28, 29, 30
meter stick	8	26, 33
milk jug (1 gallon)	8	4
paper in-basket, wire	8	27, 30
pipet, 10 mL graduate	32	21
pipet pump (or pipet bulb)	8	21
plastic tubing w/Luer-lock fitting	16	12
protractor	8	3, 8
razor blade, knife or scalpel	8	13
resistor, 47 k Ω	8	31
resistor, 100 k Ω	8	31
ring stand	8	6, 7, 10, 11, 13, 18, 22, 23, 24, 25, 30
rod, metal (12 in)	8	30
rubber stopper assembly	8	12
ruler, metric	8	3, 4, 6, 8, 13

Equipment and Supplies

scissors	2	2, 10
spoon, plastic	8	7
spring, 10 N/m constant	8	30
stepping stool, 45 cm (18 inches) high	4	16
stirring rod, glass	16	10, 18, 21, 23, 24
switch, single-pole, double throw	8	31
syringe, plastic	8	13, 19
test tube, 18 × 150 mm	40	10, 12
test tube, 25 × 150 mm	40	18, 21, 25
test tube, 25 × 150 mm screw top	64	15
test tube rack	16	10, 12, 15, 21
thermometer	8	12, 14, 33
tube, cardboard or plastic (1–2 m)	8	33
tuning forks (256 Hz and 288 Hz)	8 of each	32
volleyball or basketball	8	27
wash bottle	8	5, 9, 22, 25
watch, clock, or stopwatch	8	4, 16
wooden block with hook	8	29

Consumables

Item	Amount	Experiment
Alka Seltzer	5 tablets	9
aluminum foil	1 roll	6, 15
antacid tablets	20 g	9
aspirin	20 g	9
beral pipets	300	10, 12, 13, 25
Bufferin	20 g	9
card, small index	16	30
cup, Styrofoam	8	24

Appendix E

dental floss	1 roll	10
dialysis tubing, 2.5 cm × 12 cm	1/2 roll	10
distilled water	40 L	5, 9, 10, 11, 15, 21, 22, 23, 24, 25
egg white	20 g	9
filter paper, 2.5 cm x 2.5 cm	48 pieces	20
fruit juice	200 mL	9
gelatin	200 mL	9
graph paper	40 pcs	9, 13, 29
ice	8 bags	1, 4, 7, 12, 14, 18
liver	20 g	9, 12
marble (rock)	20 g	9
paper, black	8 pieces	6
paper, several colors	16 pieces	6
paper, white	8 pieces	6
paper clip	16 or 24	2
Parafilm, 5 x 5 cm	64	15
peas (garden)	400	14
plant, aquatic (elodea or anacharis)	16	15
plant cuttings	8	13
plastic bag, gallon	4	13
pond water	7 L	11, 15
potato, whole	9	9
quartz (rock)	20 g	9
rubber bands, small	40	20
snails, aquatic	16	15
soda water	200 mL	9
soil samples	buckets	4
starch	20 g	9

Equipment and Supplies

stickers, small (optional)	8 or 16	2
straw, plastic	8	6
string	1 roll	8, 29
tape, masking	2 rolls	2, 3, 4, 6, 8, 13, 20, 26, 30
tissue (preferably lint-free)	box	21, 22
vitamin B	20 g	9
vitamin C	20 g	9
yeast	6 pkgs	9, 12
zip ties	32	30

Chemicals

Item	Amount	Experiment
acetic acid (17.4 M)	70 mL	22
aluminum chloride	100 g	11, 22, 23
boric acid	5 g	22
buffer solution, pH 4	500 mL	9, 12
buffer solution, pH 7	1 liter	9, 12
buffer solution, pH 10	500 mL	9, 12
1-butanol	100 mL	20
calcium chloride	30 g	11, 22, 23
ethanol	800 mL	11, 20
glucose	25 g	11
n-hexane	100 mL	20
hydrochloric acid (0.1 M)	100 mL	9
hydrochloric acid (12 M)	300 mL	22, 24, 25
hydrogen peroxide (3%)	750 mL	12
methanol	150 mL	20, 22
nickel (II) sulfate	30 g	21

Appendix E

n-pentane	100 mL	20
phosphoric acid (14.8 M)	5 mL	22
1-propanol	100 mL	20
sodium bicarbonate	120 g	25
sodium bisulfite	10 g	25
sodium chloride (table salt)	350 g	9, 10, 11, 16, 17, 18, 22, 23
sodium hydroxide	100 g	24
sodium hydroxide (0.1 M)	100 mL	9
sodium nitrite	10 g	25
sucrose	600 g	10, 11

Suppliers

Flinn Scientific Inc.
1-800-452-1261
www.flinnsci.com

Hach Company
1-800-227-4224
www.hach.com

Frey Scientific
1-800-225-FREY
www.freyscientific.com

Ward's Natural Science
1-800-962-2660
www.wardsci.com

Fisher Science Education
1-800-955-1177
www.fisheredu.com