

GLOBE MEASUREMENTS AND INSTRUMENTS

Support your GLOBE program with hands-on instruments and durable equipment built for student study. Choose the instrument that matches your measurement or protocol.

Measurement	Protocol	Instrument	Item Number	Description
Atmosphere				
Air Temperature	Digital multiday max/min current air and soil temperature Protocol	Digital multiday max/min thermometer, calibration thermometer, soil thermometer, instrument shelter	470012-298	Vantage Pro2 Wireless Weather Station
			82020-744	Calibrated Electronic Thermometers with Stainless Steel Probe
			470106-366	Soil Thermometer
	Max/min current air and soil temperature Protocol	Max/min thermometer, calibration thermometer, instrument shelter	470106-216	Min/Max Thermometer
			470350-884	Small Weather Instrument Box
Barometric Pressure	Barometric Pressure Protocol	Aneroid barometer or altimeter or digital barometer	470221-934	Aneroid Barometer
			470018-694	Dial Altimeter
Cloud and Contrail Type		Cloud Chart	470005-116	Cloud Chart
Precipitation	Rainfall Protocol	Rain Gauge	470309-888	Rain Gauge
	Solid Precipitation Protocol	Rain Gauge	470146-182	Rain/Snow Gauge
		Metric Ruler	470047-180	Plastic Meter Stick
	Precipitation pH Protocol	pH indicator paper	470008-014	pH Paper
		pH Meter	470202-636	ExStik pH100 Meter
pH Buffers		470233-572	Wards pH Buffer Kit	
Relative Humidity	Relative Humidity Protocol	Digital hygrometer, thermometer	470015-832	Hygro-Thermometer
		Sling Psychrometer	470103-606	Sling Psychrometer
Surface Temperature	Surface Temperature Protocol	Infrared Thermometer	470204-110	IR Thermometer Gun
Combined Atmospheric Measurements	Automated Weather Station Protocols	Weather Station	470012-298	Vantage Pro2 Wireless Weather Station
		Datalogger	470012-300	Weatherlink Datalogger
		Temperature and RH logger	470323-466	Temperature/Relative Humidity Data Logger
Biosphere				
Biometry	Biometry Protocol	50 m tape measure	470106-460	Wind Up Metric Tape Measure
		Compass	470163-772	Orienteering Compass
		species ID Guide	470007-222	Easy Tree Key: Dichotomous Tree ID Kit
		Densimeter	470018-578	Densimeter
		Grass Clippers	10755-988	Spring Action Shears
		Plant Clippings Drying Oven	470006-400	Plant Clippings Drying Oven
Fire Fuel	Fire Fuel Protocol	50 m tape measure	470106-460	Wind Up Metric Tape Measure
		Clinometer	470018-762	Wards Student Clinometer
		Species ID Guide	470007-222	Easy Tree Key: Dichotomous Tree ID Kit
		Flags	470018-566	Yellow Stake Flags

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GLOBE MEASUREMENTS AND INSTRUMENTS (CONTINUED)

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Biosphere (continued)				
		Meter Stick	470047-180	Plastic Meter Stick
		Dowels	470092-226	Hardwood Dowel
Landcover Classification	Land Cover Sample Site Protocol	50 m Tape Measure	470106-460	Wind Up Metric Tape Measure
		Densimeter	470018-578	Densimeter
		Clinometer	470018-762	Ward's Student Clinometer
Phenology				
Animal migration	Arctic Bird Migration	Binoculars	470164-700	Celestron Upclose Binoculars
		Fieldbook	470152-784	Waterproof Field Notebook
		Bird Identification Guide	470007-934	Eastern and Central Bird Guide
		Compass	470163-772	Orienteering Compass
Plant phenology	Green-down Protocol	Flagging Tape	470122-606	White Label Tape
		Compass	470163-772	Orienteering Compass
	Green-Up Protocol	Ruler (metric)	470177-220	Plastic Ruler
		Flagging Tape	470122-606	White Label Tape
		ID Guide	470007-408	Eastern Forests Guide
	Lilac Phenology Protocol	Compass	470163-772	Orienteering Compass
	Phenological Gardens	Compass	470163-772	Orienteering Compass
		Tape Measure	470020-044	Three meter Tape Measure
		Soil pH Equipment	470104-844	Soil pH Meter
	Seeed Reproductive Phenology Protocol	Ruler (metric)	470177-220	Plastic Ruler
		Clinometer	470018-762	Ward's Student Clinometer
		Quadrat	470220-788	Folding Quadrat
Hydrosphere				
Alkalinity	Alkalinity Protocol	Water Alkalinity kit	470146-440	Alkalinity
Dissolved Oxygen	Dissolved Oxygen Protocol	Dissolved Oxygen Kit	470146-436	Dissolved Oxygen Kit
Electrical Conductivity	Electrical Conductivity Protocol	Total Dissolved Solids Tester	470020-234	Conductivity Pen Meter
		Calibration Solution	470203-118	Conductivity Solution, 74 US 52 ppm
			470203-120	Conductivity Solution, 718 US 503 ppm
			470203-116	Conductivity Solution, 1413 US 989 ppm
Freshwater Macroinvertebrates	Freshwater Macroinvertebrates Protocol	Latex Gloves	470152-194	Latex Gloves, Box 100
		Kick Net	470308-238	Kick Net Set
		D-Net	470308-232	Multiuse Insect Net
		Platic Jars	470178-182	Small Plastic Jar
		Jar Caps	470178-076	Metal Jar Cap
		Plastic Vials	470003-372	Plastic Vial with Cap
		Squirt Bottle	470161-292	Wash Bottle, 250 mL

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		Digital Voltmeter	470020-596	Digital Multimeter
Hydrosphere (continued)				
		Forceps	470156-704	Plastic Forceps
		Magnifying Glass	470021-730	Wards Dual Magnifier
		5L Bucket	470002-088	3.5 Gal Pail
		Trays	470020-966	Tray with Pour Lip
		Sieve Set	470346-962	Sieve Set
		Specimen Jars	470178-182	Small Plastic Jar
		Specimen Jar Caps	470178-076	Metal Jar Cap
		70% Ethanol	470301-044	Ethyl Alcohol Denatured 70%
Nitrate	Nitrate Protocol	Water Nitrate Kit	470219-152	Water Nitrate Kit
Salinity Brackish and Salt Water	Salinity Protocol	Hydrometer	470021-498	Sea Water Hydrometer
		Plastic Graduated Cylinder	470020-850	500 mL Polypropylene Cylinder
		Organic Liquid Filled Thermometer	470006-496	General Purpose Thermometer
Transparency—Deep Water	Water Transparency Protocol	Secchi Disk	470112-626	Secchi Disk
		Secchi Disk Rope	470004-364	Secchi Disk Calibrated Line
Transparency—Surface Water	Water Transparency Protocol	Transparency Tube	470021-244	Fieldmaster Turbidity Tube
Water pH		pH Indicator Paper	470008-014	pH Paper
		pH Meter	470202-636	ExStik pH100 Meter
		pH Buffers	470233-572	Ward's pH Buffer Kit
Water Temperature	Water Temperature Protocol	Organic Liquid Filled Thermometer	470006-496	General Purpose Thermometer
Soil (Pedosphere)				
Soil Bulk Density	Bulk Density Protocol	Sampling Jars	470137-446	Soil Specimen Jars with cap
		Drying Oven	470006-400	Drying Oven
		Graduated Cylinder	470150-800	100 mL Polypropylene Cylinder
		Sieve Set	470346-962	Sieve Set
Soil Characterization	Soil Characterization Protocol	Clinometer	470018-762	Ward's Student Clinometer
		Meter Stick	470047-180	Plastic Meter Stick
		Color Chart	470005-702	Globe Soil Color Book
		Sampling Jars	470137-446	Soil Specimen Jars with cap
		Shovel	470013-336	Tru-Fold Field Shovel
		Soil Auger	470001-822	Soil Sampler Set
Soil Fertility	Soil Fertility Protocol	Soil NPK Kit	470347-438	NPK Soil Test Kit
		Soil NPK Kit	470347-446	NPK Soil Test Kit
Soil Moisture	Gravimetric and Volumetric Soil Moisture Protocols	Balance	470003-172	Compact Balance 2000g
		Meter Stick	470047-180	Plastic Meter Stick
		Drying Oven	470006-400	Drying Oven
		Sampling Jars	470137-446	Soil Specimen Jars with Cap
		Soil Auger	470001-822	Soil Sampler Set

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Soil (Pedosphere) (continued)				
		50 m Tape Measure	470106-460	Wind Up Metric Tape Measure
		Trowel	470151-768	Garden Trowel
		Ziplock Bags	470206-288	Ziplock Bags
		Clay	470149-616	Modeling Clay
	Soil Moisture Sensor Protocol	Soil Moisture Meter	470013-574	Pocket Soil Moisture Meter
		PVC Piping	470041-530	PVC Pipe 6 x 1/2
Soil Particle Density	Soil Particle Density Protocol	Erlenmyer Flask	470178-087	100 mL Erlenmyer Flask
		Stopper	470012-960	Rubber Stopper
		Thermometer	470223-768	Student Thermometer
		Balance	470003-172	Compact Balance, 2000g
Soil Particle Size Distribution	Soil Particle Size Distribution Protocol	Plastic Graduated Cylinder	470020-850	500 mL Polypropylene Cylinder
		Soil Dispersing Agent	470233-576	Sodium Hexametaphosphate
		250 mL or Larger Container	470100-830	Polypropelene Pitcher
		Thermometer	470223-768	Student Thermometer
		Graduated Cylinder	470150-800	100 mL Polypropylene Cylinder
		Meter Stick	470047-180	Plastic Meter Stick
Soil pH	Soil pH Protocol	pH Indicator Paper	470008-014	pH Paper
		pH Meter	470202-636	ExStik pH100 Meter
		pH Buffers	470233-572	Ward's pH Buffer Kit
		Beaker	470149-364	100 mL Beaker
		Balance	470003-172	Compact Balance 2000g
Soil Temperature	Soil Temperature Protocol	Soil Thermometer	470106-367	Soil Thermometer
Field Equipment				
			470310-434	Phone Scope Magnifier, 60X

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