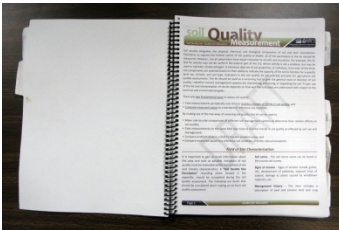










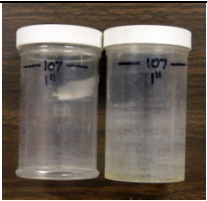












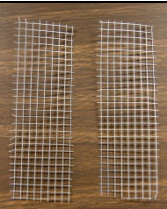


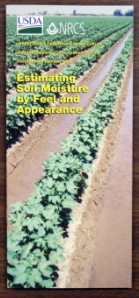


Individual Soil Quality Bucket Test Kit Contents and Details (*= volume discount provided)


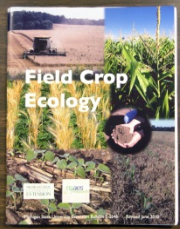
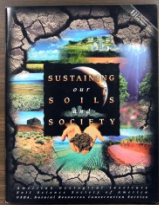
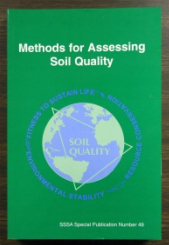
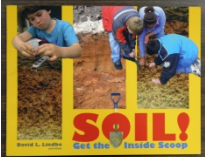
Number	Item	Quantity	Specs	Use	Approximate Cost, Provider & Notes
	Binder of Soil Quality Kit Guides for Educators and Associated Materials	1 each	NRCS led development based on original soil quality test kit guide expanded to include interps, management, and other details about interpreting and education on individual tests	Provide Guidance for soil quality sampling and eight field soil quality tests (respiration, soil organic matter, pH, EC, infiltration, BD, N, & P)	Edited and developed by Nebraska Soils Education Team & NRCS (Printing). Materials are posted on the following websites: http://liferaydemo.unl.edu/web/crop-watch-youth/soils or http://soils.usda.gov/sqi/assessment/educators.html
	Bucket Kit 'fishing' Bucket and Seat – 6 gal. – padded top	1each	Model # 02933300118	Container for all kit contents	\$14.00* Scheels Company
	Willow creek fishing vest Cabela's comes in sizes L, XL & 2XL	1per Vest	Model # 940239	Holds field soil health quick test equipment and materials shown in this document.	Cabela's \$15.21* recommend labeling pockets where contents are placed for commonly used field tests
	Soil Organic Matter Color Chart	1 per Vest	Pocket guide University of Illinois (other methods of estimating organic matter may also be used)	Estimate Soil organic matter in dark colored surface soils	\$0.60 each from Illinois Extension Service # AG-1941
	Pen and Field Notebook	1 per Vest	Small pocket size notebook and ink pen	Field & soil quality notes	\$1.50 CVS Pharmacy

	Calculator	1 per Vest	Small pocket sized calculator	Basic calculations	Dollar General \$1
	Sharpie + 4 zip lock bags	1 set per Vest	Quart size zip lock bags and permanent marker	Label and mark zip lock bags and hold soil samples	1.00 + 0.40/4 = 1.40 (Dollar general)
	Four 1.5 volt batteries	1 set per Vest	#675 hearing aid battery	Extra batteries for EC meter probe	\$4.00* Battery Patrol
	Soil Electrical Conductivity (EC) Probe & Thermometer	1 per Vest	Standardize w 1.41 dS/m (0.01M KCl), includes adjustment screwdriver, instructions and calibration solution	Measure Electrical Conductivity of soil, water and compost, also measures air and soil temperature	Hanna Instruments HI134489 \$80.00 (reg. \$110) Case for meter was bought separately and fitted with resistor so the meter does not need to be calibrated every time (calibration measurements are written on the meter)
	Case for EC Meter with resistor fitted with velcro to attach to holder	1 per Vest	Bucket Boss utility knife sheath (case) fitted with Velcro to attach Resistor	Case for holding EC Probe, Velcro to hold resistor, and resistor to do quick field calibration of EC meter	(Radio Shack 470 ohm, 1/2 watt resistor, 271-1115); Bucket Boss Company (54042) case for utility knife
	Calibrated coffee measuring scoop	1 per Vest	29.5 ml (1/8 cup)	Use for measuring soil & Water for 1:1	\$1.50 (Ecko), any grocery store

	Two 40 dram vials	1 per Vest & Bucket	Specimen bottles that are at least 3”(7.6 cm) tall and 107 to 140 ml (marked at 107 ml for 1” of water for infiltration test)	Water container for 1:1 tests and 1” of water measurement for infiltration test	Specimen bottles of any type will work that are at least 3”(7.6 cm) tall and 107 to 140 ml capacity.
	Hach Nitrate/nitrite test strips	1 per Vest	25 strips/bottle w color chart for nitrate/nitrite	Nitrate/nitrite in hand or 1:1 tests (soil:water mix) or water testing for nitrate/nitrite	\$18.35 (Hach Co. 2745425)
	Hach Ortho-Phosphate test strips	1 per Vest	50 strips/bottle w color chart for phosphate	P test in hand or 1:1 tests	\$ 20.53 (Hach Co.2757150)
	Gempler pH test paper roll (range 1-12)	1 roll per Vest	Roll of pH test paper (range pH 1-12)	pH test for soil or water in field or 1:1 tests	Gemplers PH50 \$5.70
	Aluminum cylinder + Driving Caps	2 sets per Bucket	Beveled at bottom, 5” tall, 3” OD, 60/1000 wall. Mark/ring 3” up from bottom; hard plastic driving cap with groove to fit on top. Important that this ring has narrow walls and is beveled correctly at the bottom	Measure soil BD, infiltration, water holding capacity & soil respiration	\$14+\$3(cap)x 2 = \$34 Geis Manufacturing at Seward Nebraska has specs and manufactured cylinders contact them at: geissteel@windstream.net

	2 lb dumbbell	1 per Bucket	“Cap Strength” Neoprene 2 lb dumbbell	Driving cylinder into ground with adapter cap	\$3.00 + tax, (Wal-Mart 0255613042)
	U-Dig-It folding Hand Shovel & Trowel	1 per Vest	(Amazon 381440)	To dig, excavate, and mix soil	\$7 to 15.00 U-Dig-It folding Hand Shovel & Trowel (Amazon 381440 or various on-line suppliers)
	Small Tape Measure 6-10' long	1 per Vest	Locking button with (English/Metric Units)	Measure soil depth/row space/ cylinder dimension	\$2.50 Various hardware stores
	Solvita Soil Life Respiration Kit (Garden Care Educ. Kit)	1 Kit per Bucket	2 Jars + color chart + interpretative guide + 6 paddles	Chamber for 24 hour soil respiration Min. N test/comparison	\$39.77* (Woods End labs, Solvita soil life test) volume educational discount
	Small measuring buckets	1 per Bucket	Opaque, 5 quart with metric & english units	Soil or water collection or measurement	\$1.70* True Value Hardware
	Plastic cylinder (clear cups)	4 per Bucket	16 oz Clear Solo plastic cups	Aggregate stability comparison, slaking test & demo.	\$2.00/pack at Target Stores

	Wire Mesh	2 per Bucket	¼" mesh cut to fit on & into top of cup (comes in 3ft rolls)	To hold soil clod for aggregate stability/slaking test demo.	\$1.00 for each bucket Menards, Home Depot or Lowes comes in 3ft rolls that must be cut to size
	Flat serrated dinner knife	1per Vest	5" handle +3.25" blade	Trim soil from bottom of aluminum cylinder and around edge for BD/WHC test	\$0.40 ea Dollar General
	Plastic squares & rubber bands	4 per Bucket	no cling wrapping paper used in floral shops (not too sticky) to be easily removed	To apply water uniformly for infiltration test & to cap ring for transport.	Grocery/hobby stores or floral shops Clear cellophane gift wrap (no cling used for wrapping flowers)
	Estimating soil moisture and texture by feel and appearance Brochure	1 per Bucket	NRCS public Program Aide 1619 "Estimating Soil Moisture by Feel and Appearance"	Estimating soil moisture and texture by feel and appearance	Initial supply free from NRCS, available on web http://liferaydemo.unl.edu/web/crop-watch-youth/soil_lessons
	Small water bottle 6 oz with dispenser	1 per Vest	Pint (6oz) 180 ml w dispenser	Distilled water supply for soil test vest	\$1.36* US plastics (order number 60140) (>96)
	AccuGrow Soil test Kit (pH, nitrate, Phosphate, and Potassium (K))	1 per bucket	10 tests for each (pH, nitrate, Phosphate, and K)	See through test strips for working with soil slurry- excellent for use in 'in-hand method'	\$9.60* + tax (\$31.50 retail) Environmental test systems, Hach alternative tests using 'clear' reaction indicator strips. Quantitative calibration conversion chart available for A, B, C, and D qualitative readings

	Ohaus CL 2000 portable electronic balance (not placed in bucket)	1 per bucket	Comes with 3-AAA batteries, AC/DC adapter is available at extra cost	2000g capacity for weighing soil, water or containers for bulk density and moisture calculations	\$37.00* (\$44.40 retail) Hogentogler & CO Columbia, MD (410) 381-2390
	Field Crop Ecology (E2646)	1 per bucket	Michigan State Extension Publication	Excellent soil ecology primer for teacher reference and educational training	\$17 a copy A & R Communications Michigan State University 517-432-1555 x 228
	Sustaining our Soils and Society, AGI, SSSA, USDA-NRCS	1 per bucket	Order from pubs@agiweb.org	Excellent background for the role of soils in sustaining society	\$9.95 per copy pubs@agiweb.org
	Methods for Assessing Soil Quality (SSSA Spec. Publ. No. 49; 1996)	1 per bucket	Order from Soil Science Society of America	Primary reference book for soil quality testing for scientists: highlighted index of most pertinent sections was provided to educators	\$25.00 Soil Science Society of America (contains scientific information and background on most common methods of assessing soil quality)
	SOIL! Get the Inside Scoop	1 per bucket	Order from Soil Science Society of America	A great soil science primer for K thru 12 + students	\$13.00 a copy Soil Science Society of America

Contact John Doran or Michael Kucera with questions about ordering contents at johnwalshdoran@gmail.com or michael.kucera@lin.usda.gov