



Outdoor Learning Station Project Plan: Materials Budget and Construction Instructions for Sensory Garden (4-sided)

A sensory garden includes plants that help teach students how to use all five senses (sight, touch, taste, smell, touch) as they explore the Habitat Lab. Some plants have bright flowers or leaves to trigger a visual response, while other plants feel, taste, or smell unique. Wind chimes make a great, simple addition to the garden, but expanded sound gardens can be incorporated into the outdoor classroom as well. Each garden should incorporate elements that engage the students with all five of their senses.

❖ Habitat Requirements:

- Full sun for 6-8 hours per day for optimal plant growth
- Near the entrance of the Habitat Lab if possible.

❖ Example Sensory Garden Pictures & Educational Sign:





Project Plan for Sensory Garden (4-sided)

❖ Materials List with Estimated Budget

**Listed prices are as of December 2024. They are subject to change.*

❖ Example 4-sided Sensory Garden				
(Actual Size: 4 ft 8 in (W) x 13 ft 8 in (L) x 6" (D) 4-sided raised bed garden → ~20 CF)				
Station	Materials & Supplies	Estimated Cost	Example Source	Final Cost
Required Sensory Garden Materials, Signage & Plants				
4-sided Sensory	(1) Can of Rust-Oleum Professional White Water-based Marking Paint (for laying out garden) @~\$9.98 ea	\$10	Lowe's Item# 429750	
4-sided Sensory	(70) 4" x 12" Retaining Wall Blocks (to create four sides of raised bed garden) @~\$3.28 ea	\$230 total	Lowe's Item# 477088	
4-sided Sensory	(1) 6'x50' Sta-Green Professional Landscape Fabric (weed barrier) (16' used for this garden) @~\$33.98 ea	\$35	Lowe's Item# 510606	
4-sided Sensory	(4) 32-Quart (1CF) Bags of Evergreen Organic Potting Soil Mix @~\$6.38 ea (for garden)	\$25 total	Lowe's Item #380608	
4-sided Sensory	(8) 1 CF/32 Qt Bags of Evergreen Organic Top Soil (for garden) @~\$2.18 each	\$20 total	Lowe's Item# 648834	
4-sided Sensory	(2) 1 CF Bags of Evergreen Organic Compost and Manure (for garden) @~\$3.68 ea	\$10 total	Lowe's Item #380606	
4-sided Sensory	(3) 2 CF Bags of Evergreen Organic Drainage and Aeration Soil Conditioner (for garden) @~\$4.58 ea	\$15 total	Lowe's Item# 648829	
4-sided Sensory	(2) 2 CF Bags of Natural Dark Brown Pine Bark Mulch (for garden) @~\$3.48 ea **do NOT get black mulch as it gets hot and kills plants**	\$5 total	Lowe's Item# 92118	
4-sided Sensory	(1) Package of 40 6" Black Plastic Landscape Edging Pieces (18 to create (3) 3 ft dividers between the (3) plant species to make plant ID & weeding easier) @~\$21.98 ea	\$20	Lowe's Item# 379805	
4-sided Sensory	(20) Sensory Plants (including (5) of each species – (1) species for touch, (1) species for sound, (2) species for sight) @~\$7 ea *See planting diagram on pg7.	\$140	Nursery via HLL Specialist	
4-sided Sensory	(3) mint plants for taste (plant in hanging pot, not in-ground) @~\$7 ea	\$20 total	Nursery via HLL Specialist	
4-sided Sensory	(3) annual plants (pick what is prettiest, smells best, etc.) (plant in hanging pot, not in garden) @~\$7 ea	\$20 total	Nursery via HLL Specialist	
4-sided Sensory	(3) 63-in Steel-painted Metal Shepherd's Hook (for chimes, hanging annual basket, and hanging mint basket) @~\$10.98 ea	\$35 total	Lowe's Item #150326	
4-sided Sensory	(2) hanging planter (for annuals at wheelchair height) @~\$9.98 ea	\$20 total	Lowe's Item #4058131	
4-sided Sensory	Large Aluminum Wind Chimes 37" @~\$20.77	\$20	https://a.co/d/694mWNt	





Project Plan for Sensory Garden (4-sided)

Materials List with Estimated Budget (continued):

4-sided Sensory	(5) Plant ID Signs (one for each plant species except annuals) @~\$6 ea	\$30 total	Ask HLL Specialist	
4-sided Sensory	(5) Biomarkers to hold Plant ID signs (13" stake with a 2" x 4" plate) @ ~\$3 ea (includes S&H)	\$15 total	HLL Specialist or https://mcgbiomarkers.com/shop/	
4-sided Sensory	(1) Gorilla Clear 3.75-fl oz Liquid Extreme Condition Waterproof, Quick Dry, Multipurpose Adhesive @~\$9.28 ea (to attach Plant ID signs to stakes)	\$10	Lowe's Item# 955829	
4-sided Sensory	6 ft. U-Post for Fence (for educational sign) @~\$10.69 ea	\$10	Lowe's Item# 493054	
4-sided Sensory	Educational Sign (explains how senses are engaged)	\$75	Ask HLL Specialist	
4-sided Sensory	(1) Hillman 1/4-in x 1-1/2 in Zinc-Plated Coarse Thread Hex Bolt (2-count) @~\$0.88 ea	\$5 total	Lowe's Item# 137634	
4-sided Sensory	(2) Hillman 1/4-in x 20 Zinc-Plated Steel Hex Nut @~\$0.10 ea		Lowes Item# 63301	
4-sided Sensory	(2) Hillman 1/4-in Zinc-Plated Standard Flat Washer @~\$0.15 ea		Lowe's Item# 63306	
Estimated Total Cost for Garden Materials (with signage & plants): \$770				

Additional *Optional* Sensory Garden Materials, Signage & Plants

4-sided Sensory	Rosemary Bush (Excellent for scent. Best if planted in-ground near sensory garden, but some varieties will survive in pots.) @~\$15 ea	\$15	Nursery via HLL Specialist	
4-sided Sensory	Large Outdoor Planter (if you choose not to plant rosemary in-ground) @~\$17.98 ea	\$20	Lowe's Item #5447797	
4-sided Sensory	(1) 32-Quart (1CF) Bags of Evergreen Organic Potting Soil Mix (for garden) @~\$6.38 ea (mix with ¼ bag Compost & Manure and ¼ bag Soil Conditioner to use when planting Rosemary in-ground or in pot)	\$5	Lowe's Item #380608	
4-sided Sensory	(1) 1 CF Bags of Evergreen Organic Compost & Manure (mix ¼ bag with 1 bag Top Soil and ¼ bag Soil Conditioner to use when planting Rosemary in-ground or in pot) @~\$3.68 ea	\$5	Lowe's Item #380606	
4-sided Sensory	(1) 2 CF Bags of Evergreen Organic Drainage and Aeration Soil Conditioner (mix ¼ bag with 1 bag Top Soil and ¼ bag of Compost & Manure to use when planting Rosemary in-ground or in pot) @~\$4.58 ea	\$5	Lowe's Item #648829	
4-sided Sensory	(1) 2 CF Bags of Evergreen Natural Dark Brown Pine Bark Mulch (place around base of rosemary after planting) @~\$3.48 ea **do NOT get black mulch, it gets hot & kills plants	\$5	Lowe's Item #92118	

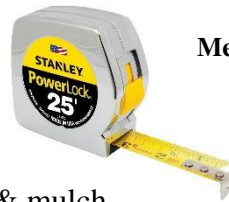


Materials List with Estimated Budget (continued):

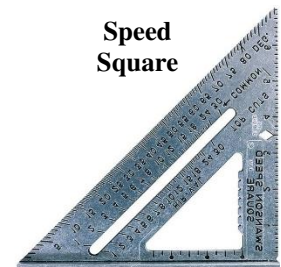
4-sided Sensory	Plant ID Signs (one for each plant species) @~\$6 ea	\$5	Ask HLL Specialist	
4-sided Sensory	Biomarkers to hold Plant ID signs (13" stake with a 2" x 4" plate) @ ~\$3 ea (includes S&H)	\$5	Via HLL Specialist or mcgbiomarkers.com/shop/	
4-sided Sensory	Additional Wind Chimes (select sets made from a variety of materials such as bamboo, glass, or shells so students can compare the sounds they make)	Varies based on item selected	Your Choice	
4-sided Sensory	Additional 63-in Steel-painted Metal Shepherd's Hook (one for each set of chimes @~\$10.98 ea)	Varies based on # of chimes	Lowe's Item #150326	

❖ Construction Tools:

- (1) 20 ft Measuring Tape
- (1) Speed Square for measuring angles
- (4-6) Shovels (2-3 for adults; 2-3 for children)
- (1-2) Wheelbarrows for moving grass clumps, soil & mulch
- (24-30) 1-gallon milk jugs (with tops cut off but handles remaining) for students to move dirt, sand, soil, etc.
- 24-inch I-beam Level
- (4-6) Hand-held Trowels (for stirring soil amendments together)
- Water hose for watering plants at the end of day
- Drill for attaching signs to posts
- Twine (40 ft long)
- (4) Garden Stakes or Flags



Measuring Tape



Speed Square



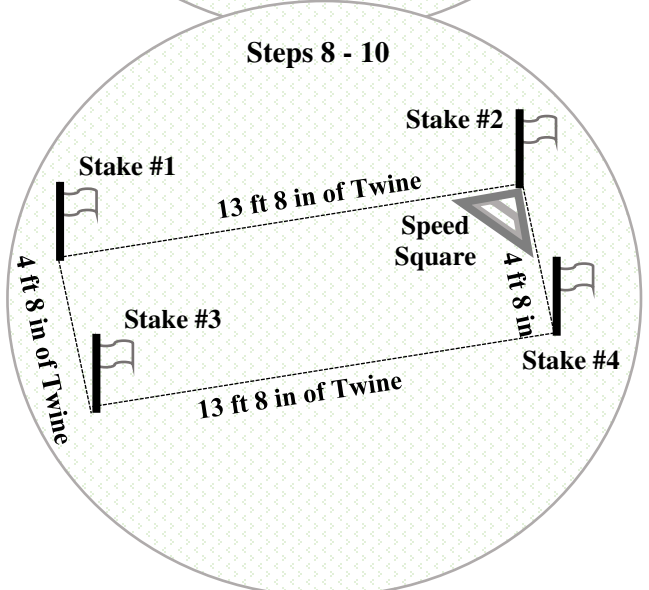
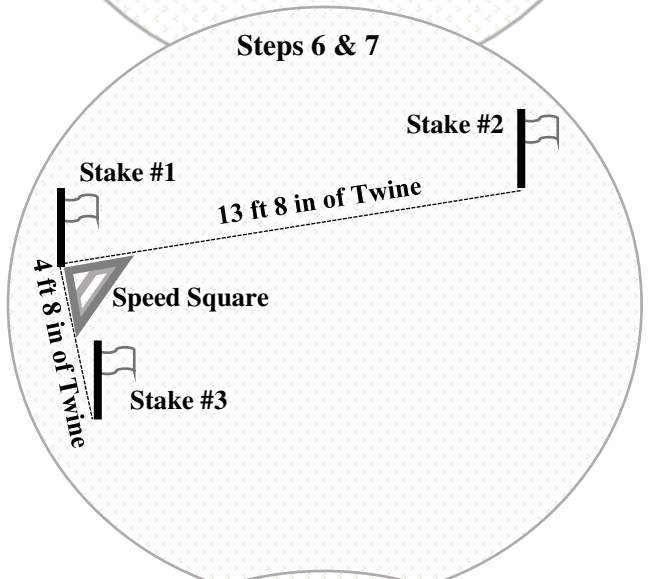
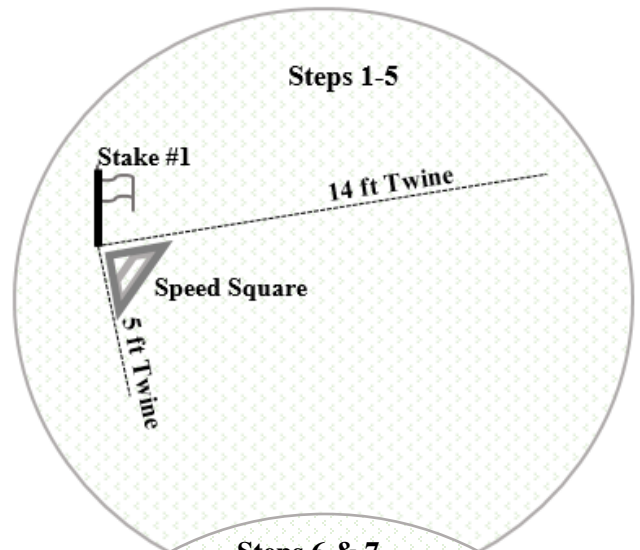
I-beam Level

❖ Construction Instructions for Sensory Garden

- 1) Gather construction tools and purchase supplies to have them on-hand for the construction day.
- 2) To create the perimeter of your garden, begin by placing **Stake #1 (or flag)** in the ground where you want the first corner to be located.
- 3) Place the **speed square** on the ground to measure the 90-degree angle needed for the inside of the first corner of your garden.

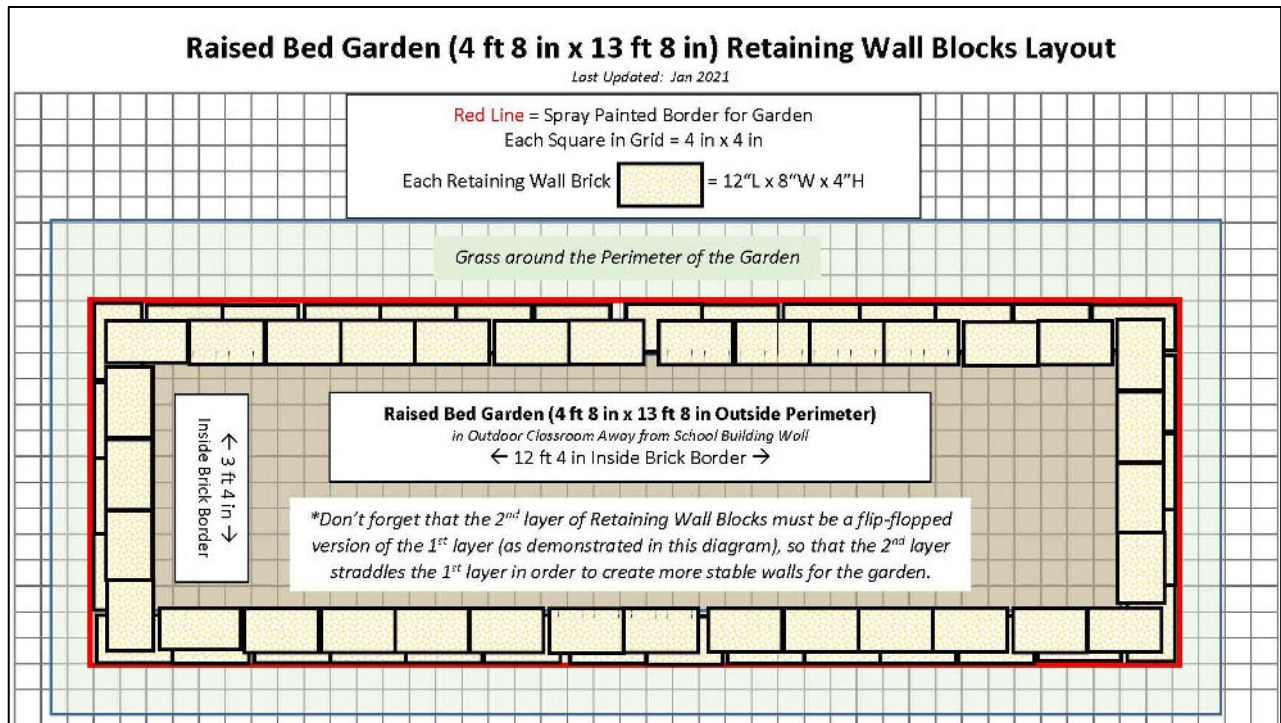
❖ Construction Instructions (continued)

- 4) Cut the **twine** into two pieces that are 5 ft long and two pieces that are 14 ft long.
- 5) Tie the end of a 5 ft piece of twine and the end of a 14 ft piece of twine to Stake #1.
- 6) Place the end of the **measuring tape** at Stake #1, and follow the edge of the speed square as you measure out 13 ft 8 in to create the first long-side of the garden. Place **Stake #2** in the ground to mark the second corner. Make sure that the measuring tape stays straight and follows the outer edge of the speed square, so that the first corner forms a 90-degree angle. Pull the 14 ft long piece of twine from Stake #1 to Stake #2, and tie the end of it to Stake #2 to create a straight line.
- 7) Place the end of the measuring tape at Stake #1 again, and then follow the opposite edge of the speed square as you measure out 4 ft 8 in. Place **Stake #3** in the ground to create the first short-side of the garden. Make sure that the measuring tape stays straight and follows the outer edge of the speed square, so that the first corner continues to form a 90-degree angle. Pull the 5 ft long piece of twine from Stake #1 to Stake #3, and tie the end of it to Stake #3 to create a straight line.
- 8) Next place the speed square on the ground by Stake #2 to determine the 90-degree angle needed for the inside of the second corner of your garden.
- 9) Place the end of the measuring tape at Stake #2, and follow the opposite edge of the speed square as you measure out 4 ft 8 in. Place **Stake #4** in the ground to mark the third corner. Make sure that the measuring tape stays straight, so that the second corner continues to form a 90-degree angle. Pull the 5 ft long piece of twine from Stake #2 to Stake #4, and tie the end of it to Stake #4 to create a straight line.



❖ Construction Instructions (continued)

- 10) Next, tie one end of the remaining 14 ft piece of twine to Stake #4 and the other end to Stake #3. This should create 90-degree angles in the third and fourth corners, and you can use your speed square to confirm this.
- 11) Lastly spray paint straight lines along the ground following the **OUTSIDE** of the garden perimeter that was created by the twine. (*See diagram below*)

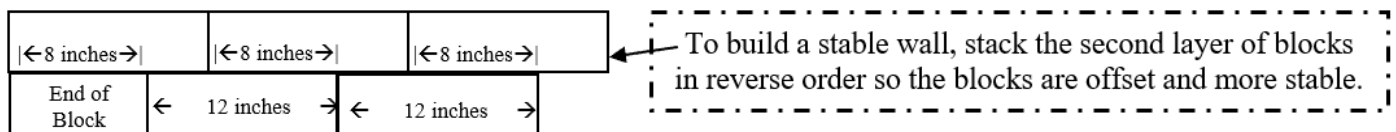


- 12) Dig and remove the grass in a path that is 1 inch deep and 8 inches wide along the **INSIDE** of the spray-painted garden perimeter to create a base on which to place the retaining wall blocks. Use your shovel/trowel to create a flat surface for the base to keep the retaining wall blocks level.
- 13) Place the first retaining wall block in a corner with the 12-inch length of the block starting along one of the long sides (13 ft 8 in long). Use your I-beam level to make sure the block is level from side-to-side and front-to-back. Add a little dirt or sand and use your trowel to level the base surface if needed. Place the next block directly next to the first one, and use your level to make sure that the second block is level with the first block. Continue adding blocks until you have placed and leveled thirteen blocks (13 ft) in a row. You should have 8 inches of base surface remaining without a block.
- 14) Place a retaining wall block at the end of your first side but place it perpendicular to the other blocks so that the 8-inch width of the new block fills in the final 8 inches of the first side of the garden. Use your I-beam level to make sure the new block is level and adjust it if needed. Continue adding blocks until you have placed and leveled four blocks (4 ft) in a row. You should have 8 inches remaining in the second side of your garden without a block.

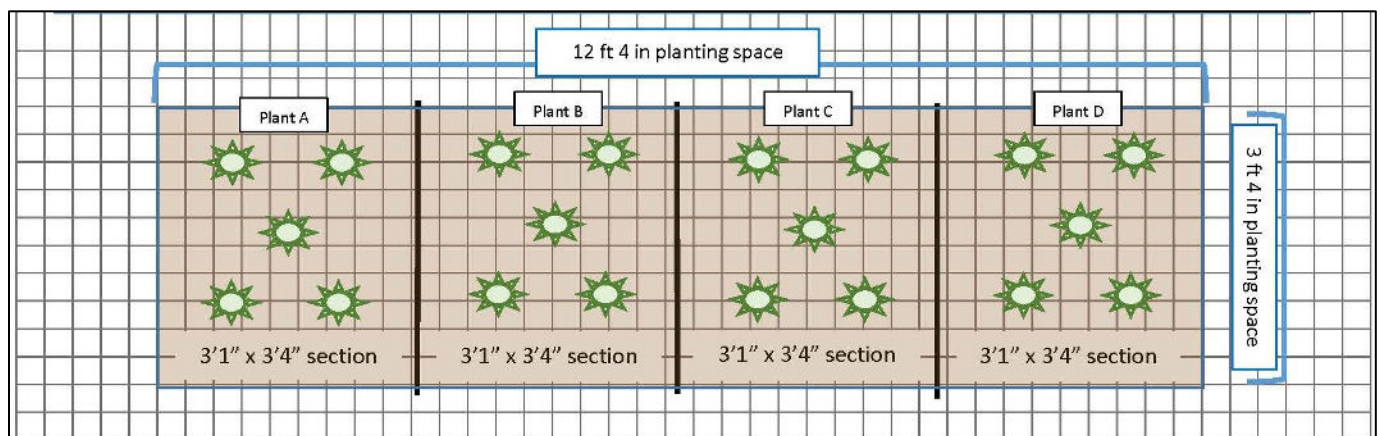
Project Plan for Sensory Garden (4-sided)

❖ Construction Instructions (continued)

- 15) Place a block perpendicularly at the end of the second side of your garden, so that the 8-inch width of the new block fills in the final 8 inches of the second side. Use your I-beam level to make sure the new block is level and adjust it if needed. Place and level twelve more blocks, leaving the remaining 8 inches of the third side of the garden without a block.
- 16) Lastly, place a block perpendicularly at the end of the third side of your garden, so that the 8-inch width of the new block fills in the final 8 inches of the third side. Use your I-beam level to make sure the new block is level and adjust it if needed. Place and level three more blocks to create the fourth and final side of the garden. The first level of your garden is completed.
- 17) Place the landscape fabric (weed barrier) on the grass inside the garden area, push the fabric against the insides of the retaining wall blocks, and lay the edges of the fabric on top of the blocks so that the fabric is sandwiched and held in place between the first and second layers of retaining wall blocks. If your fabric is not wide enough to cover the insides of the block and have the edge of the fabric lay on top of the block, then you need to make your garden a little smaller (less wide).
- 18) Next, start laying the second layer of blocks from the same corner that you started in for the first layer of blocks, but in reverse order (counter-clockwise). Lay the end of first block on 8 inches of the first block from the first layer, pointing it in other direction. The second layer of retaining wall blocks should straddle the first layer to create more stable walls for your garden. *(See diagram on page 6 and example drawing below.)*



- 19) Fill the bottom of the garden with top soil, add the compost and manure, and then add the potting soil and soil conditioner to retain moisture in the soil. Use trowels to turn and mix the soils.
- 20) Install 3 ft dividers of the landscape edging inside the garden to create (4) 3 ft 1 in x 3 ft 4 in planting sections – each section for a different plant species. *(see the lines | in the diagrams below)*





Project Plan for Sensory Garden (4-sided)

❖ Construction Instructions (continued)

- 21) Plant the flowers, grouping each of the different species of plants together within each square. Plant the mint and annual in their hanging pots.
- 22) Add 1 inch of mulch around the plantings throughout the garden and in the pots.
- 23) Install the three shepherd's hooks around the garden. Hang the chimes and hanging pots on them.
- 24) If you chose to include rosemary and are planting it in the ground: dig a hole twice the size of the nursery pot and add a mix of potting mix, compost and manure, soil conditioner, and current soil to the hole; plant the bush in the hole; and add mulch around the base. If you chose to include rosemary and are planting it in a pot: fill the pot with the mix of potting mix, compost and manure, and soil conditioner; plant the bush, top with mulch.
- 25) Attach Plant ID signs to stakes using adhesive. Sink the stakes a few inches into the ground in front of the appropriate plant species grouping or bush.
- 26) Insert the educational sign post (u-post) in the ground near the garden and attached the educational sign to it using the nuts, bolts, and washers.
- 27) Water all of the new plantings thoroughly.

