



Outdoor Classroom Project Plan: Construction Instructions for Example Box Turtle Habitat

❖ Construction Tools & Supplies for Outdoor Classroom Build Day:

- (8) Shovels (4 for adults & 4 for children)
- (1) pick ax for removing large rocks if necessary
- (2) Post Hole Diggers (for digging trench for enclosure and holes for 4"x4" post braces)
- Wheelbarrow (for moving grass clumps, soil & mulch)
- Water Hose (for filling pond and watering plants at the end of day)
- 12" inch Level & 3' foot Level (for the top of the perimeter of the enclosure and the top of the pond)
- 25' ft Measuring Tape (for measuring & spray-painting the perimeter of the enclosure)

❖ Construction & Planting Instructions:

- 1) Procure tools, materials & supplies, and have them on-hand for the Outdoor Classroom Build Day.
- 2) Using the Landscape Marking Spray Paint, mark the following (*see the example layout on page 4*):
 - i. An 8'4" x 16' rectangle on the ground where the perimeter of the turtle enclosure will be located in the outdoor classroom.
 - ii. The perimeter of the pre-formed pond on the ground wherever it will be located inside the enclosure.
 - iii. The general shape of the terracotta pot on its side to create a "cave" where the turtles can hide from predators to show the students and volunteers where to dig inside the enclosure.
- 3) For the pre-formed pond:
 - i. Dig out the area within the spray-painted circle 7" deep. Use some of the sand to help level the bottom of the hole. Make sure there are no rocks sticking up that could puncture the pond. Then place the pre-formed pond inside the hole. Use your Level to make sure that the sides of the pond are even.
 - ii. Place your aquatic plants in the pond. Keep them in their plastic pots. If there are no holes in the pots, poke 3 small 2" holes in the side of each pot to allow the plants to suck up the water from the pond. Pour some of the pea gravel in each pot around the base of each plant's stem to help weigh down the plants so they don't float.
 - iii. Pour and mix one bag of top soil and the rest of the bag of sand into the pre-formed pond around the plant pots. Pour the rest of the bag of pea gravel on top of the soil and sand in the bottom of the pond. On one side of the pond, place two retaining wall blocks on top of the gravel, and then stack the third retaining wall block on top of those two to create steps for the turtles to enter and leave the pond.
 - iv. Lastly, use the water hose to fill the pond 6" deep.
- 4) For the terracotta pot "cave" (*see photo on right*):
 - i. Dig a hole 2" wider and longer than your terracotta pot shape.





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❖ Construction & Planting Instructions (continued):

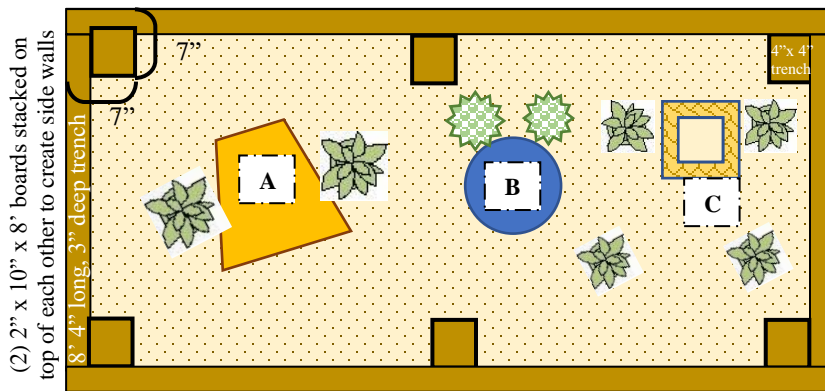
The hole should be 6” deep in the back (where the bottom of the pot will be located when it’s on its side) and 12” deep in the front (where the opening to the pot will be when it’s on its side). Keep the excavated dirt nearby for use later.

- ii. Place the terracotta pot in the hole on its side to make sure that the hole is big enough. The hole should be deep, wide, and long enough for roughly a third of the pot to fit in the ground, and the bottom of the hole should be smooth and level so the terracotta pot is fully supported underneath.
- iii. Once the pot is in place, fill in the open end of the pot with the 2 CF bag or organic soil until the soil inside the pot is level with the ground around it and then fill the pot with loose leaf litter. Then build up soil around the sides of the pot and on top of the pot to create a mound covering everything but the opening of the pot. Place rocks and plant plants (using the potting soil around the new plantings) around the terracotta pot to make it look more natural. When you’re finished, it should look more like a natural cave than a pot in the ground.

5) For the perimeter of the enclosure:

- i. Using the shovels and post hole diggers, dig a trench that is 3” wide and 3” deep along the border of the habitat (where the lines are spray painted on the ground). Keep the excavated dirt nearby for use later.
- ii. Use the 3 ft Level to make sure the trench is level all the way around the perimeter of the enclosure.
- iii. Dig four additional 4” x 4” x 4” deep holes in the four corners and two additional 4”x4”x4” holes in the middle of the 16’ boards for the 4”x4” posts to be placed as braces (*see below*) to support the 2” x 10”s.

(2) 2” x 10” x 16’ boards stacked on top of each other to create front & back walls



Example 8' x 16' Box Turtle Habitat

- A. Terracotta Pot for “Cave”
- B. Pond
- C. “Nesting Zone”

The other symbols represent plants.

Front, Back & Sides attach to (6) 4” x 4” x 24’ long posts with 4” of posts in the ground

- 6) Select a 12” x 12” area within the habitat’s border to demonstrate the “nesting zone”. Dig and remove the top layer of grass in the area, and then loosen the top 2” of soil remaining in the area. Pour sand on the area, and then use a shovel to mix the sand with the loosened 2” layer of soil. Pour a little more sand on the area, and then place leaf litter on the ground around the perimeter of the “nesting zone.”

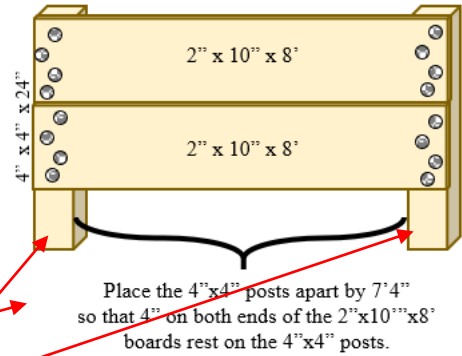


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❖ Construction & Planting Instructions (continued):

7) Now that you have the large components of the habitat installed, it's time to assemble the enclosure itself. Follow the directions below.

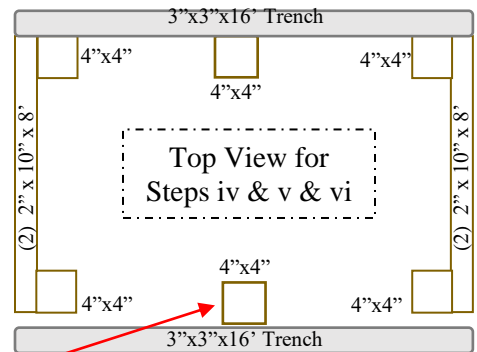
i. Place (2) of the 20" long 4"x4" pieces horizontally on the ground 7'4" apart (*see drawing*), and place (2) of the 8' long 2"x10"s side-by-side with the ends sitting on the top 20" of each 4"x4" piece. You should have 4" of the 4"x4" posts still showing – these are the parts of the posts that go down into the ground as braces to support the sides of the enclosure.



ii. Using a drill, screw (4) 3" deck screws through the 2"x10"x8' board into the 4" x 4" x 20" post (*see drawing above*).

iii. Repeat Steps i & ii to attach the second pair of 2" x 10" x 8' boards to the 4" x 4" x 20" posts with (8) 3" deck screws.

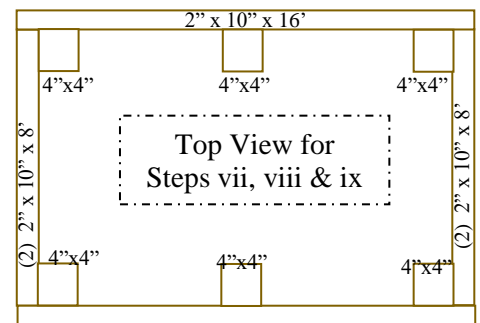
iv. Place the 2"x10"x8' pieces that are attached to the 4"x4" posts into the 3" deep x 8' long trenches with the remaining 4" of the 4"x4" posts going into those previously dug 4"x4" holes in the corners of the enclosure. (*see diagram to right*)



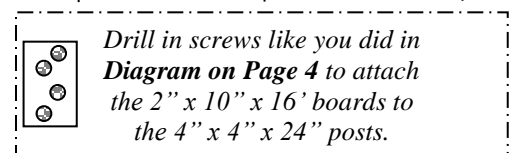
v. Use the Level to make sure that both of the 2"x10"x8's are level. If they are not level, add or remove sand or soil in the 4"x4" holes and/or along the 3" trench to make them level.

vi. Next, place the (2) remaining 4"x4"x24" posts into the two remaining holes that are in the middle of 3" trenches. Use your measuring tape to make sure that 20" of the posts are above ground. Add/ remove soil & sand to level the posts as needed.

vii. Place a 2"x10"x16' board in each of the (2) 3" x 16' trenches, and use the Level to make sure that both of the boards are level. If they are not level, add/ remove sand/ soil along the trench (under the boards) to make them level. These boards should also match where the bottom 2"x10"x8' board on each side of the enclosure meets the 4"x4" posts in the corner.



viii. Using a drill, screw (4) 3" deck screws through the 2"x10"x16' board for the back of the habitat into each of the (3) 4"x4" posts using a total of 12 screws. (*see diagram & text box on the right*) Then do the same thing for the 2"x10'16' board for the front of the enclosure.





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❖ Construction & Planting Instructions (continued):

- ix. After the bottom boards are secure, then use the drill and (12) 3” deck screws to attach another 2”x10”x16’ board (*directly above the first board*) to the three 4”x4” posts. Do this for the front and back of the enclosure.
 - x. Once the enclosure is constructed, fill in the trench using the excavated soil until it is even with the surrounding ground. The 3” of enclosure underground will prevent your turtle from burrowing out. The 17” above ground will keep the turtle in its enclosure.
- 8) Plant your remaining cover plants and food plants throughout the habitat using the rest of the potting soil. Then water all of the plants thoroughly.
 - 9) Place one of the flat landscaping rocks on the ground in a sunnier area of the habitat for the “basking station”.
 - 10) Place two of the flat landscaping rocks on the ground in a shadier area on opposite sides of the habitat to create separate “feeding stations” for each turtle.
 - 11) Use the two remaining flat landscaping rocks to make the entrance to the terracotta pot “cave” smaller, making it hard for animals other than the turtles to enter. Do this by propping up and securing the rocks against the open end of the burrow, creating a cave-like appearance. (*see photo on page 3*)
 - 12) Add logs, leaf litter, small rocks, pine cones, etc. to create varied terrain and a natural-looking habitat for the turtles to explore.

