

Cacapon Institute

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From the Cacapon to the Potomac to the Chesapeake Bay, we use science and education to protect rivers and watersheds.

HOW TO BUILD A LOW BUDGET STREAM TABLE

CAUTION: ELECTRIC TOOLS & PUMP AROUND WATER IS DANGEROUS

Instruction:

1. Create “foot”: Lay plywood down with “bad side” up. Measure 1x4 to match length of 2’ side, cut and screw 1x4 board FLAT even on outer edge. Mark 1x4 to match length along side between 1x4 end boards. Cut and screw on FLAT even to outer sides of plywood.
2. Attach sides: Flip plywood over so “foot” is down and good sanded side is up. One edge at a time measure 1x6 to match side & cut. Apply glue liberally and tack 1x6 in place with bottom edge of board even to bottom of foot. With side tacked in place pre-drill holes and screw side to bottom. Screws should be approximately 6” apart and alternate between screwing to foot, and into plywood. Be careful screws do not split the plywood or put a hole inside the box frame. Repeat for all four sides. Glue corners where 1x6 overlaps. Check that glue “bead” shows inside at all seams – apply extra glue where needed.
3. Seal wood: After glue has dried, apply paint, polyurethane, sealer, etc. to the inside and sides of stream table. Several coats may be needed. The box should be water proof.
4. Attach Drain: Drill a 1” hole (or hole diameter to match the outer diameter of drain hose) along narrow end of “bottom” of the table about 1” from the side and approximately 3/4 offset to one long side. A drain hole off center will allow for more curving in the “stream”).
5. Drill 1” hole in side of the square bucket approximately 2” from bottom (hole should be high enough that when spigot is inserted it remains above the bottom of the bucket). Thread one 3/4” lock washer onto spigot. Apply waterproof glue on threads of spigot behind lock washer and insert into bucket at hole. Insert spigot into hole from the outside so lock washer is flush with flat side of the bucket and glue fills any void. Thread second lock washer on the inside of bucket and tighten (over tightening will crack a plastic bucket).



Material:

- ✓ 2’x4’x 3/4” plywood, AB rated (no knots, sanded)
- ✓ 1x4 x 12’ (2 each ~2’, 2 each ~4’) pine board #2
- ✓ 1x6 x 12’ (2 each 2’, 2 each 4’) pine board, #1, or #2 rated with no knots
- ✓ 1-1/4” wood screws (longer than 1-1/4” will poke a hole in the bottom, less than 1-1/4” will not hold)
- ✓ Glue, exterior rated water proof enough to run a ~14’ bead
- ✓ Polyurethane or waterproof paint or sealer
- ✓ 3/4” contractor grade garden hose, or similar hose (about 3 feet in length)
- ✓ Sand (about 80lbs)
- ✓ Two ~2.5 gallon buckets (one bucket must have flat sides)
- ✓ One milk crate, stool, or box to use as a stand
- ✓ Water (5 gallons)
- ✓ 3/4” garden hose spigot with male pipe thread
- ✓ Two 3/4” lock nut (found in the electrical department and normally used to hold fitting to a breaker box)
- ✓ 2”x4”x2’ board to elevate one end
- ✓ Shims to level the stream table from side to side
- ✓ Small level

Optional Material: In place of the manual bucket & spigot use an electric pump. Purchase a medium size aquarium pump with screen or filter & ~6' of hose. CAUTION: ELECTRIC TOOLS & PUMP AROUND WATER IS DANGEROUS obtain or construct a Ground Fault Interrupter extension cord.

To Operate:



Arrange the stream table on a sturdy surface like a picnic table or saw horses. Allow the drain to hang over the edge so the hole is accessible from the bottom. Elevate the opposite end approximately 1-1/2" and level the stream table from side to side. Insert drain hose from bottom with drain in bucket. Place approximately 2" of sand in stream table and smooth over with a board or by hand. Place a milk crate or box at the upper end and place the bucket with spigot there. Fill it with water and open the spigot slowly. Vary the volume to change stream conditions and periodically pour water from drain bucket in top bucket.

(Electric option: In place of the bucket with a spigot, place the pump in the drain bucket and run hose to upper end of stream table).

NOTES:

Tracing a curved stream channel in the smooth sand will speed up the creation of a stream channel. Adjusting the pitch of the stream table will change the channel. Less pitch will slow the water and likely create a wider, shallower, or multi channel stream. A steeper pitch will create a faster flow and likely a deeper narrow channel. Add various size stones, different color sand, wood mulch, or other items to sand mix to create varying erosion conditions.

For more information visit www.cacaponinstitute.org or call Frank Rodgers 304-856-1385.

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