

Groundwater Model: Needed Materials for ONE three-pump model (for three students)

Material	Cost, sources (subject to change)
1 Plastic Shoe Box	\$1.00
2" of $\frac{3}{4}$ " white PVC pipe (scrap)	\$1.50 new
3 x $\frac{3}{4}$ " white PVC "T" connectors	\$.30/ea = ~\$1.00
3 large condiment/shampoo/soap pumps	\$.50 at cosmetic outlet store or free atop warehouse-size soaps and shampoo bottles.
3 zip-ties	Packs of 20 are \$1.00 or so.
1 square foot of garden ground cloth	\$.07 (\$10 for roll of 150 square feet)
5-10 lbs of sand	\$5 for 50lb bag

Make 1: \$25 total

Make 10: \$70 total

Construction Tools Needed:

1. PVC Pipe cutter or hacksaw blade.
2. Hobby knife (like an X-acto knife).
3. Drill + $\frac{1}{16}$ " drill bit (or smallest you can find)+ $\frac{3}{16}$ " drill bit (no bigger than $\frac{1}{4}$ ")
OR soldering iron with normal and needle tip
OR blow torch + nails + pliers to melt holes into PVC
4. Scissors
5. Measuring Tape
6. Pencil/Pen

Model construction and development by Ryan Hollister