

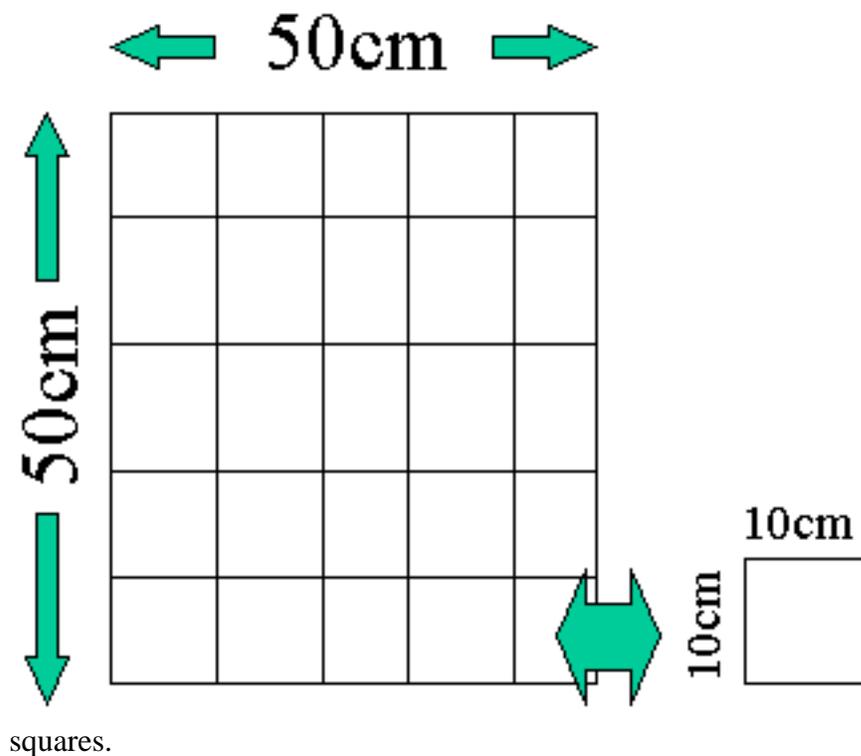
What's a quadrat?



A quadrat is a grid used by researchers to aid in counting organisms. Quadrats can vary in size and number of squares they contain. For our program we are using meter-squared quadrats, 50 cm on a side, divided into twenty-five 10X10 cm squares. Quadrats can be used to define an area for sampling within which the number of organisms can be counted or their abundance estimated in some way (e.g. percent cover or number of smaller squares with the organisms present).

How to make a quadrat?

Fig. 1 Overall shape and size of meter squared quadrat and the 10cm x 10cm individual



Instructions:

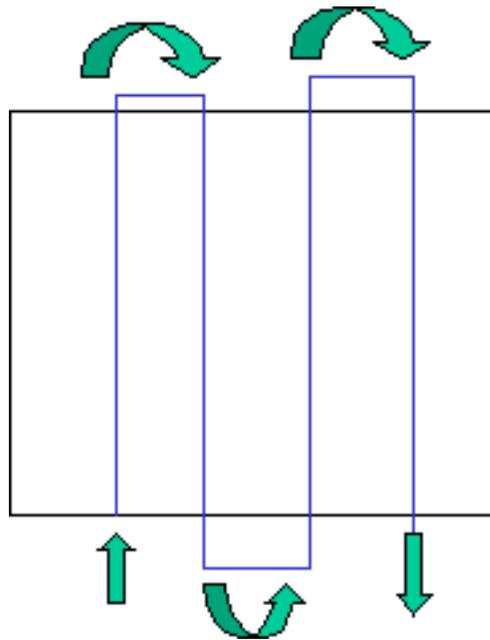
To make a 1/4 meter squared quadrat (Fig. 1) you will need the following supplies:

- 2" Sch (schedule) 40 PVC (you will need at least 2.2m for each quadrat)
- 2" 90 degree angle PVC elbows (4/quadrat)
- PVC primer (We use Low VOC, IPS Weld On, P-70 purple primer, stock # 10277) use in well ventilated area, preferably outside!
- PVC glue (We use; Low VOC, IPS Weld On Series 2000 plastic pipe cement, PVC 2700 clear regular bodied) use in well ventilated area, preferably outside!
- Nylon string (approximately 5m per quadrat, enough to tie knots and fix frays)
- Saw to cut PVC (We use a hack saw)
- Drill with an 1/8" drill bit to make 16 holes (4 holes per side, once strung you will have 25 squares)
- Matches, lighter, glue gun or candle to melt ends of string (this insures that knots will stay taught)
- Meter tape
- Vice (to hold PVC and/or quadrat in place while you saw and /or drill)
- Hammer and nail (once you have measured where the holes will be drilled, tap the nail to make a small indentation on the PVC, this will make the drilling easier, the drill will be less likely to slip)
- Tape (wrap tape around the end of the nylon string prior to stringing, this will make stringing much less frustrating, the sting should feed through the holes nicely)
- Pencil (to mark PVC for gluing and drilling)
- Latex gloves (the primer stains)
- Old newspaper (the primer stains)

Once you have all of the necessary supplies:

1. Cut the PVC (use extreme caution when using a saw) into the correct lengths about 0.48m each, it may vary slightly some elbows may be more snug than others.
2. Prior to gluing (make sure you are in a well ventilated area, preferably outside!) assemble the PVC lengths with the elbows to insure correct length, when all sides are aligned properly mark the PVC at the point where it meets the elbow (when you glue make sure the elbow lines up with the line again). The insides of the quadrat should measure 50 cm on a side.
3. Next lay out the newspaper, put on the latex gloves and then primer the inside of the elbow and the outside of the PVC pipe where they will join (approximately a 1" band on each).
4. Next put a thin layer of the PVC cement on top of the primer, then put the elbow and the length of PVC together. Make sure the alignment is correct and then let dry (beware, it dries quickly!).

5. Do one side at a time insuring it is aligned and will lay flat before proceeding, then repeat previous steps until the frame is finished.
6. Using a meter tape measure the PVC and mark with a pencil (near the center of the inner side) the spot where the holes will be drilled (the holes should be 10cm apart, thus you will have 4 holes per side).
7. Repeat until you have marked all four sides.
8. Once marked, put the frame in a vice (so that it will be steady) now take a nail and place it on the mark and tap it until there is an indentation in the PVC (this will make a nice groove and will keep the drill from slipping).
9. Repeat until all of the spots are marked.
10. Now using a drill, drill holes straight through the two walls of the PVC.
11. Once all of the holes are drilled, cut a 2.5m piece of nylon string and place an inch or two wide band of tape on the end (this will make threading the string much easier).
12. Weave the string through so that you have a nice taught grid (Fig 2.)!
13. Okay last step, to insure that the string stays taught and the ends do not fray you can either glue the knot with a glue gun or you can melt the ends of the string by burning the string with a match, lighter, candle or rope burner (just be careful not to burn through the string or burn yourself).



A.
Start stringing the first 2.5m length of string here. Tie knot, pull tight through first hole, then continue to string following the arrows.

B.
Pull string taught, tie knot, then glue or burn knots at both ends.

C.
Start Stringing the second
2.5m length of string here. Tie
knot, then continue to string
alternately going over and
under the first length of string,
following the arrows.

D.
Pull string taught, tie knot,
then glue or burn knots.

