

Quadrats Online: Student Worksheet



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Activity 3

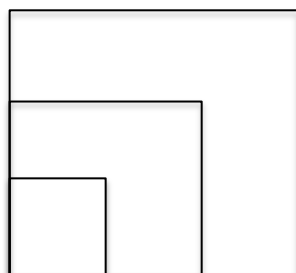
Nested Quadrats (Level 9)

Introduction

How do we determine what size our quadrats should be when carrying out quadrat sampling in the field? We need to use a quadrat size that is large enough to represent the chosen ecosystem accurately, yet not so large as to be impractical. You will set up a series of nested quadrats that will demonstrate how to determine the correct quadrat size.

Activity

1. Obtain a copy of the 'Nested Quadrats' grassland map for this activity.
2. Draw a vertical and horizontal axis on the map with 1 cm graduations.
3. Use a random number generator e.g.
http://www.mathsgoodies.com/calculators/random_no_custom.htm
to generate two random numbers. These will become the x and y coordinates of a shared corner for your nested quadrats.
4. You should begin by drawing a 1 cm x 1 cm square as your first quadrat on the map and then record the number of different plant species in this quadrat in the results table.
5. Increase the length of the quadrat by 1 cm each time and count the numbers of different species present in each quadrat. Include the previous quadrats in your count each time. Complete the results table below.



Results

Quadrat length	Number of plant species per quadrat

Interpretation of results

6. Now graph 'length of quadrat vs. species number' as a line graph in the space below.

7. You can now determine the optimal size of the quadrats required for your survey by looking at where the graph becomes horizontal. What size quadrat would adequately sample this grassland ecosystem?

8. Explain what would need to be considered when carrying out an activity such as this one in the field.

Conclusion

9. Explain how nested quadrats are used to determine the size of quadrats that should be used to sample an ecosystem.
