

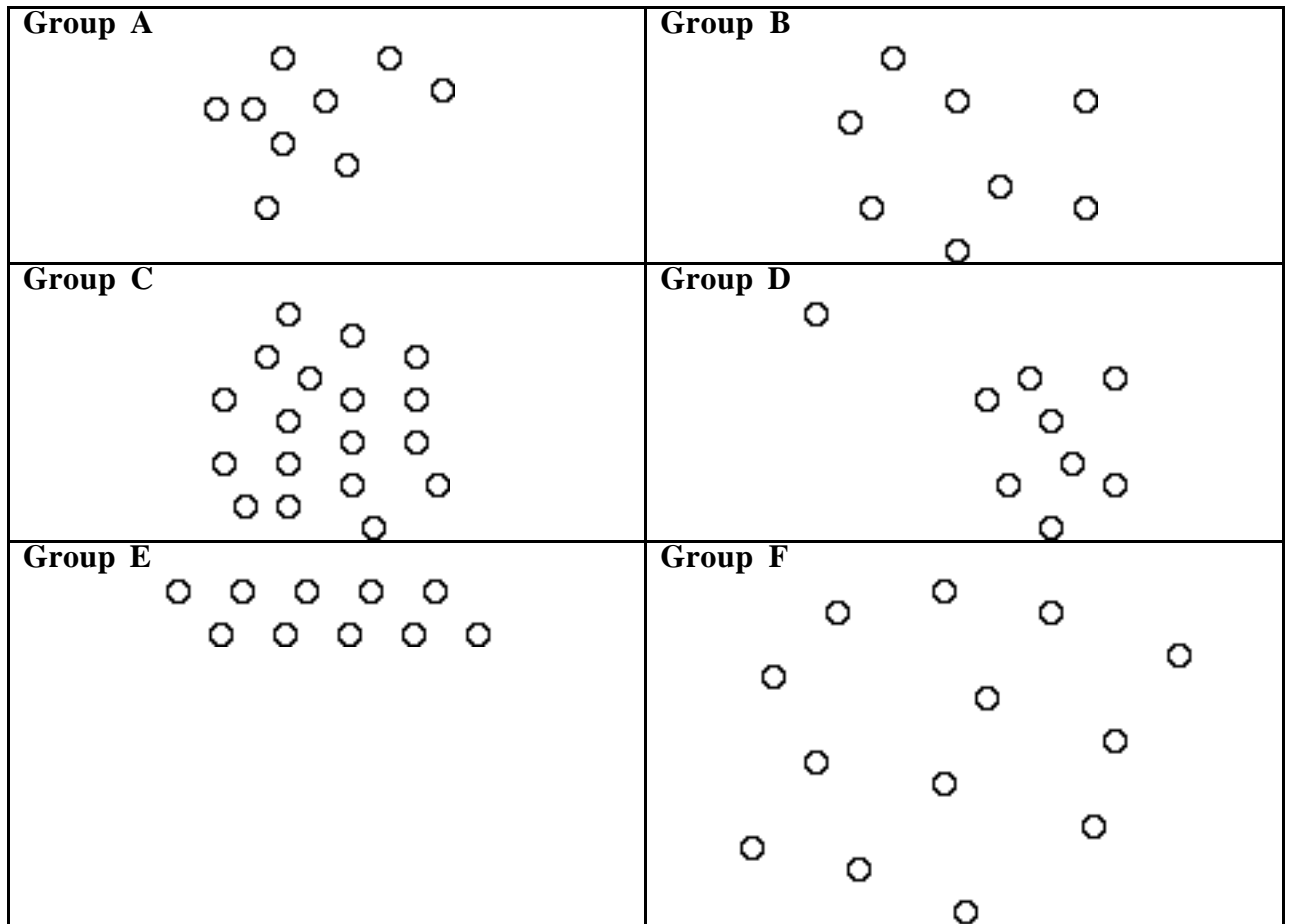
'Creating Measures' Crowded-ness Task - Example #4

Malcolm Swan
Mathematics Education
University of Nottingham
Malcolm.Swan@nottingham.ac.uk

Jim Ridgway
School of Education
University of Durham
Jim.Ridgway@durham.ac.uk

This problem gives you the chance to:

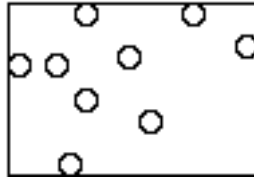
- criticise a given measure for the concept of "crowded-ness"
- invent your own way of measuring this concept and use it effectively



Warm-up

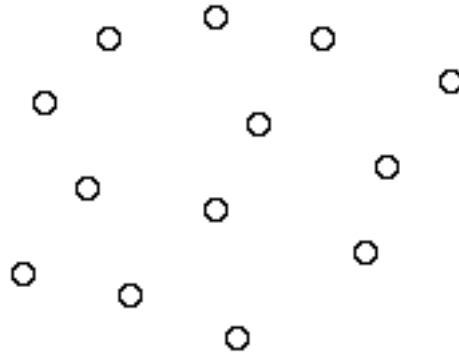
In your opinion, which group *looks* the least "crowded"?
Which *looks* the most "crowded"?
Put the groups in order of "crowdedness", just by looking.

1. Someone has suggested that "crowdedness" may be defined as the **area** of a box that will *just* enclose all the people in a cluster. So for group A:



"Crowded-ness" = 7.26 m^2

Use this method to calculate the crowdedness of group F:



2. Write down **at least two** reasons why this is not a good way of measuring "crowdedness".
3. Describe a better method for measuring "crowdedness". Explain why it is better.
4. Use your method to give a numerical value to the "crowdedness" of Groups A to F.
Use your method to put the groups in order of "crowdedness".