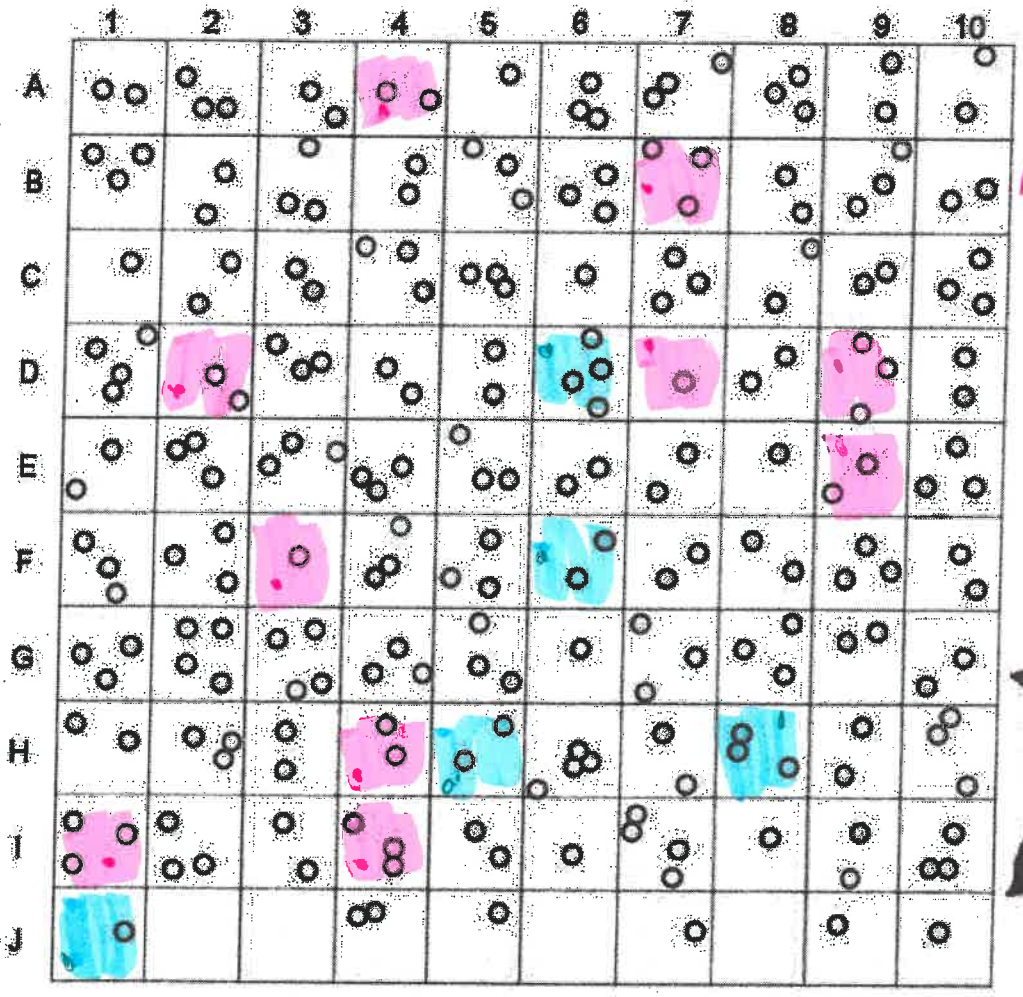
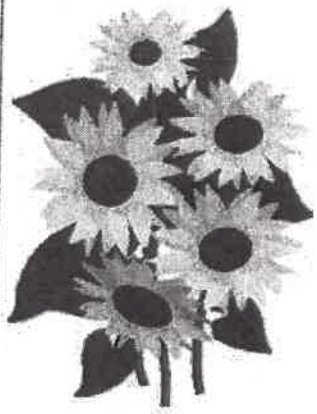
Lab: Quadrat Sampling

Name: Key

In this lab activity we will simulate the quadrat sample method for determining population size. Below is a simulated field. Each filled in circle represents one individual sunflower plant. Assume that each square represents a 1 meter by 1 meter square.



Random = Plants



Procedure:

1. Begin by randomly picking 5 squares and highlighting them and count the individuals within those 5 quadrats. Record you data on the table on the back
2. Choose 10 new squares, highlight them in a different colour and count the individuals inside those quadrats
3. Use a proportion to estimate the total population based on your two samples.
4. Calculate the population density using each sample.
5. Record your results in the data table.

Lab: Quadrat Sampling

Name:_____

Data Table

Number of Quadrats	Area of the samples (m^2)	Number of individuals within the quadrats	Estimation of the total population	Estimation of population density
5	5	12	$\frac{12}{5} = \frac{x}{100}$ $x = 240$ flowers	$D = \frac{N}{A}$ $= 12/5 = 2.5$ sunflowers/m^2
10	10	22	$\frac{22}{10} = \frac{x}{100}$ $x = 220$ flowers	$D = \frac{N}{A}$ $= 22/10 = 2.2$ flowers/m^2

6. Which one was more accurate, the first trial or the second one? Why?

2nd More quadrats sampled

7. What type of population distribution does this population appear to have?

Random = plants

8. How does the population distribution affect the number of quadrats that should be used to sample the population?

If clumped or random more quadrates make more accurate estimations

9. Do you think your results were accurate? Why or why not? What could make the estimation more accurate? Yes. Random choice of plots

More accuracy by using more quadrats

10. Give an example of a population where the quadrat method would ***not*** work

Mobile population