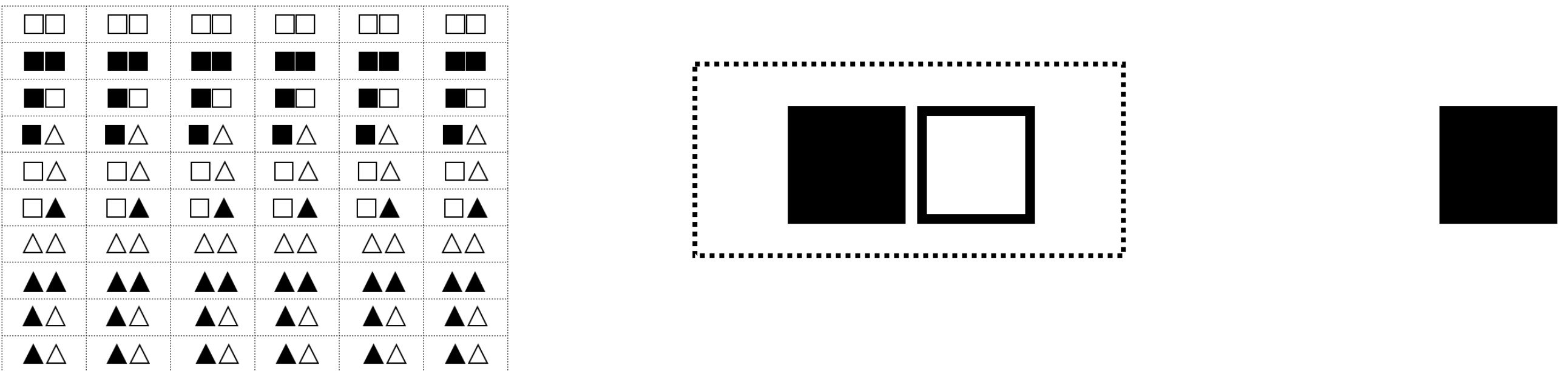


# POPULATION BOTTLENECKS

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On the next sheet is a collection of symbols. The whole page represents the populations. Each rectangle is an individual in the population, and each individual has two alleles for a gene. All alleles represented on the sheet are for a single gene.



**Population**      **Individual organism**      **Allele**

## Activity

1. Count the number of each allele present within the population. Note this down in the data collection section.
2. Cut out each individual. Fold each in half and put them in a cup/beaker.
3. Model a bottle neck: select a small number of individuals at random with one hand. (Here you are assuming the individuals in your hand can no longer breed with the rest of the population, either because of physical separation or because the rest of population has died).
4. Record the new allele frequencies in the data collection section.
5. Return your individuals to the population and repeat.
6. Use the data and your own ideas to answer the questions.

## Data Collection

				
Initial Allele Frequencies				
New Allele Frequencies (1)				
New Allele Frequencies (2)				
New Allele Frequencies (3)				

## Questions

Describe and explain results.

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Under what circumstances might such bottlenecks be observed?

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