

03 A field had a large population of thistles.

03.1 Write down what is meant by the term ‘population’.

[1 mark]

03.2 Students decided to estimate the number of thistles in the field.

Describe how quadrats could be used to estimate the number of thistles in the field.

[4 marks]

03.3 The students then estimated the population of snails in a small pond. They collected 30 snails from the pond. They marked the shells of these snails with paint and released them back into the pond. One day later, the students collected 63 snails, 6 of which had paint on their shells.

Calculate the population of snails in the pond, using this formula.

$$\text{population} = \frac{\text{number in 1st sample} \times \text{number in 2nd sample}}{\text{number of marked in 2nd sample}}$$

[1 mark]

Population = _____

03.4 Another student criticised the method. This student said that painting the shells would make the snails more visible to predators.

Explain how this would affect the estimate of the snail population size.

[2 marks]
