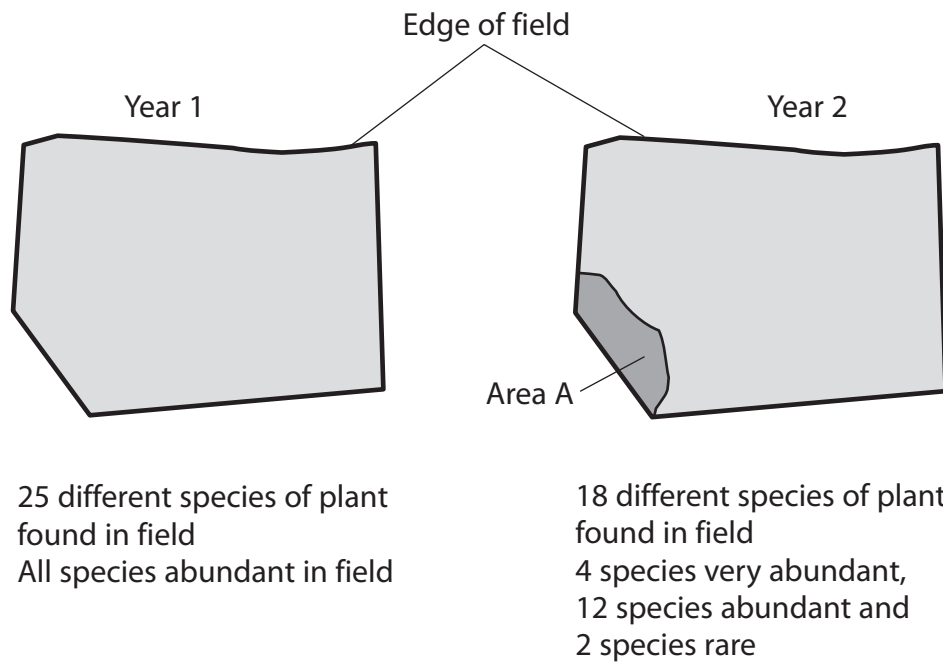


- 3 A student studied one field in two different years.  
She recorded some information, shown in the diagram below.



- (a) Using the information in the diagram, suggest in which year the species richness was greater. Give a reason for your answer.

(2)

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- (b) Buttercup plants were found in this field in both years. Buttercup plants can produce new plants by asexual reproduction.

- (i) Name the type of cell division required for asexual reproduction.

(1)

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- (ii) The genetic diversity of buttercup plants in the field is low.  
Describe and explain why asexual reproduction results in low genetic diversity. (2)

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- \*(c) Another student noted that several species of plant did not grow as well in area A as they did in the rest of the field. He suggested this was due to a shortage of nitrate ions in the soil in this area.

The effect of varying nitrate ion concentration on the growth of one plant species can be investigated in a laboratory.

Describe how this investigation can be carried out to produce **reliable** results. (5)

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(Total for Question 3 = 10 marks)

