

National 5 Biology

Sampling Techniques

1. Name (a) 3 biotic factors
(b) 3 abiotic factors (2)
2. Describe how you would measure one of the abiotic factors from 1(b). (2)
3. What error could occur while you are measuring this abiotic factor and how could you minimise the chances of it happening? (2)
4. Write down what the following are used for:
(a) pitfall trap (b) pooter
(c) sweep net (d) quadrat. (4)
5. Pick any organism and state how its distribution can be influenced by abiotic factors. (2)
6. The information in the table below describes four trees found in a wood.

Name of tree	Deciduous	Shape of Leaves	Position of Cones
<i>Pinus sylvestris</i>	evergreen	narrow needles	hang down when mature
<i>Illex decidua</i>	evergreen	broad	not present
<i>Larix aquifolium</i>	deciduous	narrow needles	upright when mature
<i>Abies alba</i>	evergreen	narrow needles	upright when mature

Construct a branching key for these four trees. (4)

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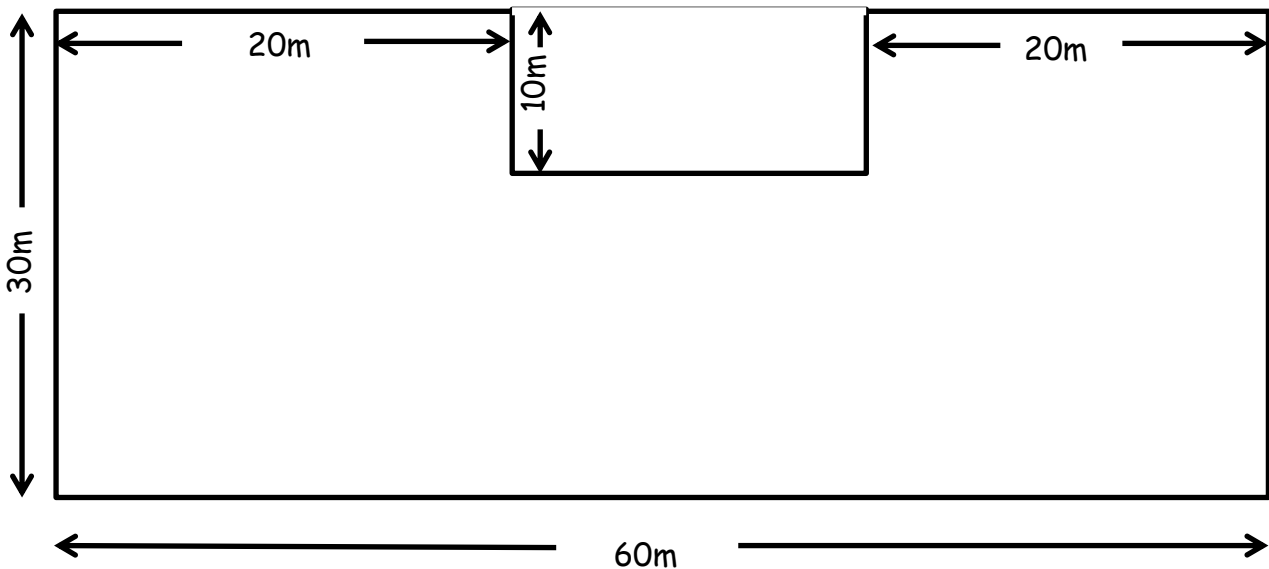
7. Some of the characteristics of 4 British swallow-like birds are shown in the table below.

Species	Tail	Appearance	Coloured Breast Band
Sand martin	Notched	Light	Present
House martin	Notched	Light	None
Swift	Notched	Dark	None
Swallow	Forked	Light	Present

Construct a paired statement key to identify the above birds.

(4)

8. The following diagram represents a field with thistles growing in it.



10 areas of the field were randomly sampled for thistles using 0.25m^2 quadrats. The results are shown in the table below.

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Quadrat	Number of Thistles
1	3
2	14
3	7
4	11
5	8
6	1
7	1
8	14
9	12
10	9

Calculate each of the following, showing your working:

- (a) The area of the field. (1)
- (b) The average number of thistles per quadrat. (1)
- (c) The total number of quadrats in the field. (1)
- (d) The total number of thistles in the field. (2)

Total = 25