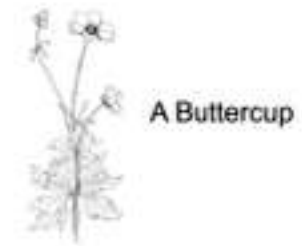
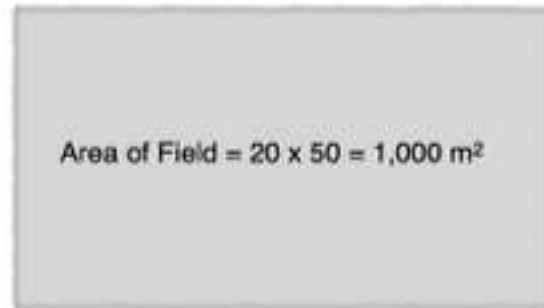


0 1

A student wanted to estimate the number of Buttercup flowers on a field using quadrats. Each quadrat measured 1m by 1m.



0 1

1

Describe a method that the student could use to estimate the number of Buttercups on the field. **[5 marks]**

Randomly place a quadrat on the field [1]

throw behind back/use a random number generator to ensure random placement [1]

count the number of buttercups inside quadrat [1]

repeat this 10 (or any other number) more times [1]

calculate the average number of buttercups per quadrat/total number of buttercups counted divided by the number of times the quadrat was thrown [1]

(1 quadrat fits into the field 1000 times so...) multiply this average by 1000 [1] (to give an estimate of the total number of buttercups on the field)

0 1

2

Describe how you could use a 30cm ruler, a 50m tape measure and a light meter to investigate the relationship between light intensity and the width of Ivy leaves in a woodland. **[5 marks]**

lay the 50m tape measure across the floor of a woodland to act as a transect [1]

from an exposed edge of the wood towards the centre of the wood [1]

use a light meter to measure light intensity. [1]

do this at regular intervals along the transect [1]

try to do at the same time of day/hold the light meter at the same height [1]

at each location use a 30cm ruler to measure the width of 3 ivy leaves (at a set height) [1]

take an average width for that location/light intensity [1]

plot a graph of light intensity against average leaf width [1] or distance from woodland edge against leaf width [1]

to see if there is a relationship between the two variables [1]