Thank you for bringing your students to Kew.

We hope that the teaching session assisted in developing the skills and knowledge of your students and provided them with an insight into the amazing plants and plant science at Kew.

Following your visit, you can use the post-visit activity to further support your students' learning.

Pupils could answer the exam-style question on the following page, and then use the mark scheme to check their answers.

Kew
Royal Botanic Gardens

Post-visit
Pupil activity

An ecologist is comparing the species diversity of two same-sized meadow areas, to determine which area should be used to build new houses on. She has summarised some of her findings in the table below:

Species	Number of specimens found in area A	Number of specimens found in area B
Succisa pratensis	43	14
Galium verum	3	7
Ranunculus acris	0	8
Leucanthemum vulgare	0	8
Cardamine pratensis	2	11
Total number of plants in the area	48	48

The index of diversity can be calculated using the formula:

$$d = \frac{N(N-1)}{\sum n(n-1)}$$

a) The index of diversity has been calculated as 1.24 for area A. Calculate the index of diversity for area B. Show your working.

[2 marks]

b) Use your answers from part a to compare the biodiversity in the two areas.

[2 marks]

c) Explain why the index of diversity gives more information about the two areas than counting the total number of plants.

[2 marks]

Post-visit pupil activity

Question	Marking Guidance	Mark	AO	Comments
1. a)	Correct answer of 5.06, 2 marks; If N(N-1) = 2256, **OR** $\sum n(n-1)$ = 446, then award 1 mark.	2	AO2	Accept 5.058/ 5.1
b)	1. The index of diversity for area B is greater (5.06) than area A (1.25). 2. This means that area B has a greater level of biodiversity than area A.	2	AO3	
c)	1. Index of diversity takes into account both the number of different species and the number of individuals of each species. 2. This means that species that exist in low numbers are taken into consideration.	2	AO1	Accept "species richness" and "species evenness" for point 1.