

Field Studies Classroom activity pack

This pack contains a series of activities for you to complete with your class both before and after your visit to Kew.

You may choose to do all of the activities or just select one. Post-visit activities are intended to build on the learning from the educational session at Kew. Many of the resources can be used on a whiteboard or can be printed.



Thank you for booking the Field Studies education session at Kew. You can use the pre-visit activity to support your students' learning.

Ahead of your visit, your students could answer the question below. They can tell us about their answers when they come to Kew.

 **Question:** Kew employs ecologists who travel to many different countries documenting the world's flora. Why are plant ecological surveys important? How is the data they gather used?

You could encourage your students to discuss the following:

- Documenting changes to plant populations and finding causes
- Identifying threatened plants and adding them to the IUCN red list
- Finding new, potentially useful, plant species.



Pre-visit
student
activity



Kew employs ecologists who travel to many different countries documenting the world's flora.

Why are plant ecological surveys important?

How is the data they gather used?



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.





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
<i>Succisa pratensis</i>	43	14
<i>Galium verum</i>	3	7
<i>Ranunculus acris</i>	0	8
<i>Leucanthemum vulgare</i>	0	8
<i>Cardamine pratensis</i>	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]



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	A02	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	A03	
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	A01	Accept “species richness” and “species evenness” for point 1.

