

KS5 Ecosystems and Climate Change 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 Ecosystems and Climate Change education session at Kew.

You can use the pre-visit activity to support your pupils' learning.

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



Suggest how plants might be affected by climate change.

You could encourage your students to discuss:

- Migration
- New competitors
- Habitat change and loss
- Change in seasonal rhythms
- Extinction
- Adaptation to the environment



Kew's scientists study plants around the world, assessing plant distributions and analysing their traits. They use this information to predict how plants are likely to respond to climate change.

 Suggest how plants might be affected by climate change.



Post-visit teacher notes

KS5 Ecosystems and Climate Change

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

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

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



 Assess the potential impact of climate change on ecosystems.

[20 marks]



Qu.	Marking guidance	Assessment Objectives	Total marks
1	<p>Assess the potential impact of climate change on ecosystems.</p> <p><i>AO1 – Knowledge and understanding of ecosystems. Knowledge and understanding of climate change.</i> <i>AO2 – Application of knowledge and understanding to analyse and evaluate how climate change will impact upon ecosystems.</i></p> <p>AO1</p> <ul style="list-style-type: none"> • May include a definition of ‘ecosystem’ as an interacting community of living and non-living things. • Examples of ecosystems within the UK (e.g. pond, or sand dunes). • The relationship between the various characteristics of an ecosystem (including biotic and abiotic factors). • Climatic factors that affect ecosystems, including: precipitation, wind, temperature, sunlight and humidity. • Any other relevant information should be credited. <p>AO2</p> <ul style="list-style-type: none"> • Assessment of how the climate is changing, and the impacts of this on the climatic conditions in ecosystems. Could include atmospheric warming leading to summer droughts, sea-level rise and potential for floods. • Assessment of how changing climatic conditions is directly affecting ecosystems. May include: <ul style="list-style-type: none"> - Sea level rising, meaning loss of area and changes to coastline. - Shifts in species distribution - Life cycle timing of some species may change, which may affect other species who rely on them. - Non-native/invasive species may enter a habitat - Different competition between species. - Changes to environmental factors in ecosystem e.g. water flow and salinity. • Assessment of how changing climatic conditions is indirectly affecting ecosystems. May include: <ul style="list-style-type: none"> - Changes in land management e.g. crop types. - Changes to our use of marine ecosystems e.g. fisheries and for renewable energy. - Changes to international trade of food and other goods. - Changes to land use e.g. urban planning and rural land use - Changes to the way we use resources e.g. energy and fuel. • May refer to past climate events and their impacts. • Assessment of how irreversible the changes are. • A conclusion is drawn, focussing on (possibly irreversible) present and future impacts climate change is having on our ecosystems in the UK. 	<p>AO1 = 10 AO2 = 10</p>	<p>20</p>