



Great Debate

Please use this information to help you and your students get the most from your visit.



Your workshop

Workshop name	Great Debate
Meeting point	School Reception and Picnic Area on the Lower Ground Floor. Please be here five minutes before the start of the workshop. You will be met by a science educator (in a purple t-shirt) who will lead your workshop.
Start time	10.30 13.30
Duration	1 hour 45 minutes
Minimum ratio	For Key Stage 4, 1 adult : 15 students For post-16, 1 adult per booking
Maximum group size	30 students Please ensure you meet the required minimum adult : student ratio.

About this workshop

The workshop is designed to support How Science Works. It uses the Museum's exhibits, statues and cathedral-like atmosphere to set Darwin's theory of evolution in an historical context, bringing to life the heated controversy surrounding the publication of *On the Origin of Species*.

There are three parts.

Activity 1 Tour of the Central Hall

A short, lively tour that uses Museum statues, displays and architecture to introduce some of the key characters of the historical debate.

Activity 2 Preparing presentations

The class is split into groups and challenged to present the views of a given character (Darwin, Owen, Huxley or Wilberforce). Groups are set a structured task to explore certain exhibits, looking for evidence to support their character's argument, either for or against Darwin's theory.

Activity 3 Tour of evidence

The class tours the exhibits to hear groups present evidence for their character's argument. This provides a re-enactment of the debate, as groups argue the viewpoints in character.

Before and after your visit

No prior knowledge of evolution or the historical debate is needed, although a general familiarity with the concept of natural selection or the term 'survival of the fittest' will help. The workshop could be used as an introduction to teaching evolution, or afterwards to set the topic in an historical context. The workshop is also a stand-alone support for the delivery of How Science Works.

For teachers wishing to do pre- and post-visit work, please visit the evolution section of our website at www.nhm.ac.uk/nature-online/evolution/index.html. You will find biographies of the characters and a summary of the initial tour, as well as comprehensive, curriculum-tailored support for teaching evolution at KS4. This includes specially recorded interviews with Museum scientists, targeting KS4 concepts.

The workshop's plenary session considers the interplay between theory and evidence, how social context affects the development and acceptance of scientific theory, and provides a rich source for further discussion in class.

Evaluation of the workshop

To continually assess the effectiveness of the workshop, we would be grateful if you and your students could complete feedback forms at the end. It will take just a few minutes.

Health and safety

This workshop takes place in the galleries, which are a public space. Please help us to keep the group together during the tour to ensure members of the public can move past freely.

A note about behaviour

Our experienced science educators will lead your workshop. We work to make it an inspiring and inclusive experience for all pupils and find we rarely have problems with behaviour. However, teachers have overall responsibility for the behaviour of their pupils and we expect you to support us with this where necessary. Pupils benefit significantly when teachers and accompanying adults also get involved in the workshops, so please do join in where appropriate.

Learning objectives

- to gain a greater understanding of the relationship between theory and evidence
- to understand how scientific controversies can arise from different ways of interpreting evidence
- to understand how uncertainties in scientific knowledge change over time, and the role of the scientific community in validating these changes
- to begin to understand how variation within species can lead to evolutionary changes
- to foster an interest in forming an opinion on the origins of life

Skills/practical techniques

Reinforcing key skills in communication and working with others:

- to present points of view to the class and/or small groups
- to listen, understand and respond appropriately to others
- to co-operate in groups
- to find and present evidence to the class

National Curriculum links

Key Stage 4

How science works

1 Data, evidence, theories and explanations

- b How interpretation of data, using creative thought, provides evidence to test ideas and develop theories.
- c How explanations of many phenomena can be developed using scientific theories.
- d That there are some questions that science cannot currently answer, and some that science cannot address.

3 Communication skills

- c Present information, develop an argument and draw a conclusion.

4 Applications and implications

- c How uncertainties in scientific knowledge and scientific ideas change over time and about the role of the scientific community in validating these changes.

Breadth of study

5 Organisms and health

- b Variation within species can lead to evolutionary changes.

National Curriculum links

A-Level

3.6 How science works

- Use knowledge and understanding to define problems, present scientific arguments and scientific ideas.
- Analyse and interpret data to provide evidence.
- Appreciate the tentative nature of scientific knowledge.
- Communicate information and ideas in appropriate ways using appropriate terminology.
- Appreciate the role of the scientific community in validating new knowledge and ensuring integrity.

4 Key skills

- Communication.
- Working with others.

Biology appendix

1.3 Biodiversity

- f Adaptations of organisms to their environments can be behavioural or physiological as well as anatomical.
- g Adaptation and selection are major components of evolution and make a significant contribution to the diversity of living organisms.