

How Science Works at the Museum

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



Your workshop

Workshop name	How Science Works at the Museum	
Meeting point	Underneath the Earth Hall escalator in the Red Zone. Please be here 10 minutes before the start of the workshop. You will be met by a science educator (in a purple T-shirt) who will take you to the workshop.	
Start time	10.45	13.45
Duration	1 hour and 15 minutes	
Minimum ratio	1 adult : 15 students	
Maximum group size	15 students	
Please ensure you meet the required minimum adult : student ratio.		

About this workshop

The Museum is an international leader in the scientific study of the natural world, with more than 300 scientists working behind the scenes. In this workshop, developed by the Micropalaeontology and Learning teams, students solve a real scientific problem using an authentic practical procedure used at the Museum. This inspiring opportunity to do some 'real science' offers students a hands-on insight into how science works.

Students are challenged to determine the geological age of a clay sample using palaeontological techniques. They soak, sieve and dry the clay to reveal microfossil species present. This data is interpreted and the method and reliability of the data is evaluated to reach a class consensus on the geological age of the clay. The importance of repeatability and the peer review process is discussed.

Before your visit

No prior knowledge of microfossils is needed, although a general familiarity with the concepts of what fossils are and how the age of fossils increases with the depth of the rocks in which they are found, will help. The workshop will highlight the relevance of, and reinforce the practical enquiry and communication skills learnt in, science lessons.

Health and safety

Please ensure students wash their hands after finishing the workshop.

A note about behaviour

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

Evaluation of the workshop

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

Learning objectives

- to collect data from primary sources accurately and safely with others
- to solve a scientific problem
- to analyse and interpret scientific information
- to draw conclusions using scientific, technical language, conventions and symbols
- to understand how confidence in the reliability of a scientist's method and data is increased by other scientists repeating the process
- to understand the importance of a scientific method's repeatability and the process of peer review in validating conclusions drawn from data

National Curriculum links

Key Stage 4

How science works

2 Practical and enquiry skills

- b Collect data from primary sources.
- c Work accurately and safely with others, when collecting first-hand data.
- d Evaluate methods of collection of data and consider their reliability as evidence.

3 Communication skills

- c Draw a conclusion, using scientific and technical language, conventions and symbols.

4 Applications and implications of science

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