Dive the Mary Rose 4D: 500 Years of Technology and Change

Teacher's Guide – Key Stage 3

Our 4D cinema is one of the highlights of a visit to the Mary Rose Museum, telling the story of how we found and excavated the ship.

Pupils will discover the technological and scientific advances that have been made since the *Mary Rose* sank, explore the methods used in past attempts to salvage the ship, and be challenged to use key engineering and design skills to make their own machines to 'raise the *Mary Rose*'.

Skills covered:

- Planning different types of scientific enquiries
- Exploring the effects of levers, pulleys and simple machines and the forces involved
- Understand and use mechanical systems.
- Discovering ideas of technological and scientific change over time in post-war British society.

Links to the aims of the National Curriculum for Science

- 'working objectively, modifying explanations to take account of new evidence and ideas and subjecting results to peer review.'
- 'develop a deeper understanding of factors to be taken into account when collecting, recording and processing data.'
- 'make predictions using scientific knowledge and understanding'.
- 'use appropriate techniques, apparatus, and materials during fieldwork and laboratory work'.
- 'apply mathematical concepts and calculate results'.

Links to the subject content of the National Curriculum for Science

- 'simple machines give bigger force but at the expense of smaller movement (and vice versa): product of force and displacement unchanged'.
- 'forces…with rubbing and friction between surfaces, with pushing things out of the way; resistance to motion of air and water'.
- 'work done and energy changes'
- 'non-contact forces: gravity forces'.
- 'pressure in liquids, increasing with depth; upthrust effects, floating and sinking'.
- 'opposing forces and equilibrium: weight held by stretched spring or supported on a compressed surface'.

Links to other areas of the National Curriculum:

Design and Technology: 'critique, evaluate and test their ideas and products and the work of others'.

Design and Technology: 'identify and solve their own design problems and understand how to reformulate problems given to them'.

Design and Technology: 'develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations'.

Design and Technology: 'understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists'.

Design and Technology: 'understand how more advanced mechanical systems used in their products enable changes in movement and force'.

English: 'Pupils should be…giving short speeches and presentations, expressing their own ideas and keeping to the point'.

History: 'understand historical concepts such as continuity and change…similarity, difference and significance, and use them to make connections, draw contrasts, [and] analyse trends'.

History: 'social, cultural and technological change in post-war British society'

History: 'a study over time, testing how far sites in their locality reflect aspects of national history (some sites may predate 1066)'.

Links to the Curriculum Review (November 2025)

- This session promotes oracy by requiring participants to explain their plans and designs to the rest of the group.
- It covers cross-curricular links between Science, History, and Design and technology. It requires students to 'think like designers and engineers' but also to use the evaluation skills that are fundamental to Science and History.

Expanding the Learning:

Here at the Mary Rose we understand the importance of making the most of educational trips and giving students experiences and memories to last. We aim to support teachers in giving their students the chance to reflect upon their time here at the museum and relate that to their classroom work to make it more fun, enjoyable and memorable.

The following are some ideas for classroom activities that could aid students in recalling what they have learnt here at the Mary Rose Museum and to solidify that understanding. Students can…

- Evaluate their designs – what went well, what could they have done better?
- Find out more about the actual project and how it was lifted in real life. There is a film by one of the original divers and archaeologists on our YouTube channel about the lifting: https://www.youtube.com/watch?v=tQiYpCJB6V0
- Explore memories of the lifting, by interviewing people who watched it or were there. Find the original news footage on YouTube.
- Research the other salvage attempts: in particular, the Tudor efforts.
- Create a timeline to look at the ways in which technology has changed in the 500 years since the Mary Rose sank. What is possible now that wasn't possible then?