

How water wheels powered the mills

Pupils will gain an understanding of how water wheels powered the mills; finding out about the site's history and mill use, along with learning the scientific terms related to water wheels and the engineering processes behind how they worked.

WHAT YOU WILL NEED

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| WW_TN | How water wheels powered the mills |
| WW_TS | History of a water wheel and how a water wheel works |
| WW_HO1 | Build your own water wheel (KS1) |
| WW_HO2 | Draw a diagram of a water wheel |
| WW_HO3 | Write the instructions to build an 18th century water wheel |
| WW_HO4 | Build your own water wheel (KS2) |

LEARNING ACTIVITIES

Key stage 1

1. Pupils will build a water wheel, in groups, using everyday objects, to learn how the different components come together to make the wheel turn (40 minutes).
2. Pupils will review a diagram of a water wheel and draw their own interpretation (20-30 minutes).

Key stage 2

1. Pupils will learn about the craftsmanship and physics of the original water wheels, and comparing against modern processes they will write the instructions to build an 18th century water wheel (45 minutes).
2. Pupils will put their engineering skills to the test with a hands-on activity, building a water wheel in small groups (60 minutes).

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LINKS TO THE CURRICULUM

SCIENCE

Key Stages 1 and 2

- The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely
- Embedding their knowledge of everyday materials, such as wood, plastic and water – their names and properties
- Identifying differences, similarities or changes related to scientific ideas and processes
- Forces: notice that some forces need contact between two objects, but magnetic forces can act at a distance
- Identify the effects of air resistance, water resistance and friction, that act between moving surfaces

Key Stage 1

- Working scientifically: using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

Key Stage 2

- Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables
- Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect

DESIGN AND TECHNOLOGY

Key Stages 1 and 2

- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics