



# EDUCATIONAL INFORMATION

Booking and enquiries to

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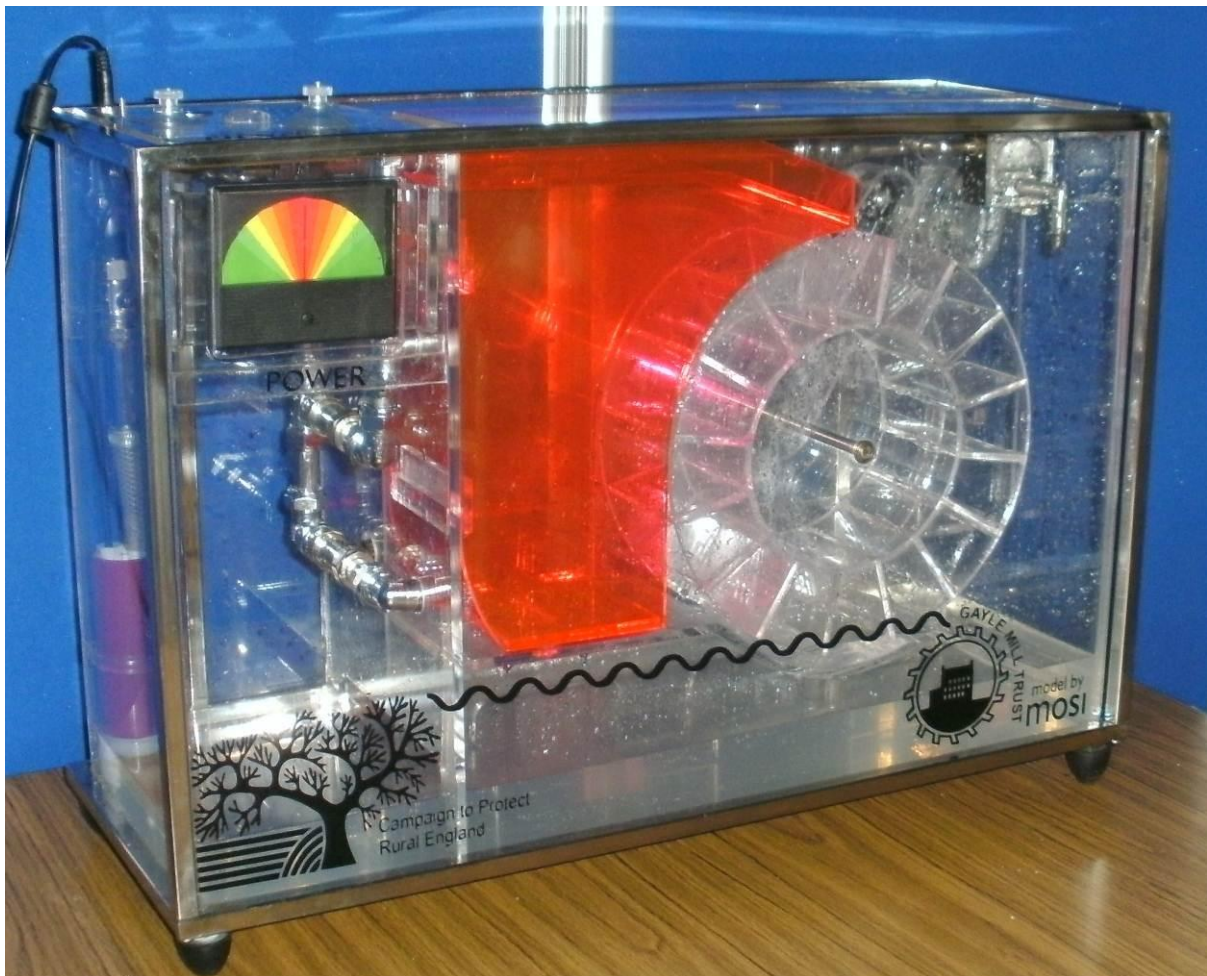
A Brief History of Gayle Mill

## **Outreach Service – FREE of charge**

You can start your Gayle Mill experience with a visit from our Heritage Education Co-ordinator to your school.

During this visit Samantha will provide a PowerPoint presentation about the Mill, introducing pupils to the story of Gayle Mill. Pupils will see a demonstration of our specially commissioned working model of a water wheel and turbine. During this presentation pupils will be able to see the different energy outputs from the 3 main types of wheel compared to a turbine.

This model is a one off, designed and made to order by the Interactives Team at Manchester Museum of Science and Industry made especially for Gayle Mill Trust. Many thanks to the Council for the Protection of Rural England (CPRE) for their financial support in acquiring this model.



This service is suitable for a class room presentation, school assembly, or afterschool club. Feel free to get in touch and discuss your requirements.

Having a special event? A fair, market or open day? Gayle Mill can come along and provide an activity stall. This is a great way to enhance a school event with an exciting external presence.

[Information and prices correct at February 2012]

## Planning a Visit

**Before a visit** – teachers are welcome to make a pre visit appointment to discuss your learning outcomes, risk assessment and visit schedule. Simply get in touch with Samantha to arrange this.

**Booking** – contact Samantha at the Mill. She will complete a booking form with you over the phone and email it to you for confirmation. This form will include all the details you need for your visit itinerary.

**Costs** – entry to the Mill is **£2.50 per pupil**. Accompanying adults are FREE. Please be aware that Gayle Mill is run by the charity and voluntary organisation Gayle Mill Trust. All income from school visits goes straight back into the charity. Your support is greatly appreciated.

**Payment** – we will invoice you for your entry fee at the time of booking. Payment is due within 30 days of your visit taking place and can be paid by BACS or cheque. All the details you will require to do this can be found on your invoice.

**Financial Support** – we offer a limited number of **£100 travel subsidies** to schools in the Yorkshire Dales to help cover your transport costs. Please register your interest at the time of booking. Subsidies are allocated on a first come first served basis.

**Numbers** – a maximum of 35 pupils can visit the Mill at any one time. If you have more pupils in your group there are other attractions locally you may like to visit, rotating between the two. For more information or to discuss your requirements contact Samantha at the Mill.

**Duration** – visits last approximately 2 – 2.5 hours unless otherwise discussed at the time of booking.

**Supervision** – tours and workshop are led by Samantha Belcher, Heritage Education and Training Co-ordinator and supported by various Volunteers. Samantha has an enhanced CRB check. Some activities require the additional support of school staff. If school parties are broken up into smaller groups for tours and activities at least one adult from school (teacher or parent/helper) will be required to chaperon the group along with one member of the Gayle Mill team. This will be detailed in your visit itinerary on your booking form.

## Facilities and location

**Location** - Post code DL8 3RZ. Gayle is a village on the edge of the market town of Hawes in Wensleydale on the A684. Gayle is approximately 17 miles from Leyburn in the east and 22 miles from Settle in the south. Full directions and a map are detailed on your booking form.

**Coach Parking** – small coaches are able to reverse down the Mill Lane. Large coaches can drop parties off at the top of the Lane and park in the coach car park on Gayle Lane. Please discuss parking with your coach driver.

**Car parking** - Available at the entrance to the Mill for blue badge holders or by prior arrangement only. The nearest public car is called Gayle Lane (10 minutes' walk away), and ample parking is available in car parks in Hawes (20 minutes walk away).

**Clothing** – The Mill can be cold even in the summer months. Please ensure pupils dress warmly, wearing layers and sturdy, close toed footwear.

**Toilets** - We have one unisex accessible toilet on site. Please bear in mind you may need to wait in a queue to use the facilities, especially if you are part of a large group. This will be taken into account on your visit itinerary.

**Lunch** – You are welcome to eat a packed lunch at the Mill. In fine weather you may like to do so outside, otherwise we can make space available to you indoors. Please request a lunch space at the time of booking. A hot drinks vending machine is also available (£1 per cup).

**First aid** – Samantha is a trained first aider, as are a number of other volunteers. First aid kits are on site. However you may wish to bring a designated first aider and kit with you from school depending on your own policies.

**Access** - The Mill is spread over three floors with steep stairs between each floor. All three floors are explored during a guided tour. Our classroom is located on the top floor, up one flight of stairs. The stairs have hand rails to aid visitors. As a listed building we do **not** have a lift. We do have a video display on the ground floor showing the areas reached by the stairs for visitors who are not able to see them in person.

**Opening times** – Pre-booked educational visits take place throughout the year on either a morning or afternoon. Public tours take place from April to October, and on the first Sunday of the month all year round. For up-to-date details on opening times please visit [www.gaylemill.org.uk](http://www.gaylemill.org.uk) or call 01969 667320.

## Links to the National Curriculum

### Summary

Teaching at Gayle Mill is mainly aimed at Key Stage 2 pupils, although we are happy to host visits from older or younger pupils/students. Contact Samantha to discuss your learning outcomes and tailor a visit to your needs. Tours and activities have been developed with the National Curriculum in mind, strongly linked to history and science. Visits are designed to inform pupils as well as develop their skills and understanding in a cross curricular approach. During guided tours and activities pupils will practice their speaking and listening skills, and enquiry skills during question and answer sessions. They will follow detailed instruction during activities and will be required to work both as a team and individually.

**Citizenship** – Working with volunteers at the Mill is an opportunity to introduce the children to the significance and value of volunteering in their own communities; an important element to curriculum progression. Pupils can hear first-hand why our volunteers continue to give their time to the Mill and what they get out of it.

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### History

Curriculum requirements	Links to Gayle Mill
<b>Chronological understanding</b>	During tours of the Mill the chronological history of the Mill is explained, its origins as a textile mill, woodworking era, and electricity generation. A time line display is used to illustrate the passing of time. Verbal question and answer sessions and a word search activity allow pupils to use vocabulary.
<b>Knowledge and understanding of events, people and changes in the past</b>	Tours discuss the Industrial Revolution as a 'period' Exploring <i>cotton</i> as a defining feature of material culture and trade at the time. Explore differences between urban and rural life, comparing and contrasting lifestyles. Changes in production at the Mill in order for it to survive. The influence of local families i.e. the Aldersons
<b>Historical interpretation and enquiry.</b>	Discussion of how we know what we know about the Mill. Sources of information. Census information, old newspapers, county records. Understanding artefacts as source of information for interpretation, including the building itself.
<b>Organisation and communication</b>	Children will develop listen skills during presentations from Mill staff; they will also have the chance to speak to the group, using relevant vocabulary, show learning and recall, and ask questions throughout the session. Word search, time line and quiz activities will be used to re-enforce these skills.
<b>Breadth of study</b>	Local Study for the Yorkshire Dales. Links to British Study – Victorian Empire, Industrial Revolution, WW2 on the home front

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## Science

Curriculum requirements	Links to Gayle Mill
<b>Ideas and evidence</b>	Activities and tours explore how things work – water turbine, generators, belt driven machinery.
<b>Investigative skills</b>	Activities requiring observation and measurement using model water wheel will create opportunities for experimentation and discussed as a group. Outcomes will be reviewed and will inform the building and testing turbine model activity.
<b>Life processes</b>	Discussion of links to forestry, wood processing, photosynthesis, growth rates, different types and hardness's of wood and their uses. Handling different types of wood.
<b>Grouping and classifying materials</b>	Exploration of wood as a material, how it is used, where and when – for example carts, replaced by metal trailers, wooden Mill Leat as a case study. Discussion of the properties of water as a liquid and the transfer of kinetic energy.
<b>Electricity</b>	See electricity being generated on site, powered by the water turbine, lighting up the turbine pit. Building a simple switch activity.
<b>Forces and motion</b>	Tours show forces and motion in belt driven machinery – belts, pulleys, and gears. Demonstration of belt driven machinery in the workshop.
<b>Breadth of study</b>	Discussion of the scientific developments at Gayle Mill, from water wheel to turbine, industrialisation of production compared to domestic production in the Dale.
<b>Communication and health and safety</b>	During tours and activities pupils will listening and follow detailed instruction. During participation pupils will be encouraged to take appropriate action of their own and each other's health and safety in the venue.

### Testimonial following a visit to Gayle Mill

'Dear Samantha,  
I just wanted to thank you for today. Mr Hayman (head teacher), the other adults, the children and myself discussed our trip out at the end of the day, and we all agreed it really was a great success. Gayle Mill is an excellent place to visit - we learnt a great deal and really enjoyed the experience. Thanks again for such an informative morning.  
Best wishes,  
Caroline'

Teacher's email following Spennithorne School visit to Gayle Mill in autumn 2011

# Hazard Identification

Risk Area	Hazard	Hazard effect	Mitigating Actions	Residual Risk
<b>Mill Building</b>	Fire	Personal injury or death resulting from entrapment, and/or smoke inhalation.	<ul style="list-style-type: none"> <li>● Provision of signage and fire escape.</li> <li>● Provision of fire extinguishers.</li> <li>● Provision of clear instructions &amp; directions</li> <li>● No-Smoking policy</li> </ul>	Low
<b>Leat</b>	Cold and moving water	Personal injury or drowning resulting from hypothermia or entrapment.	<ul style="list-style-type: none"> <li>● Provision of warning signs.</li> <li>● Provision of clear instructions.</li> <li>● Leat walling discourages access to the water.</li> </ul>	Low
<b>River (Limited access)</b>	Cold and moving water	Personal injury or drowning resulting from hypothermia or entrapment.	<ul style="list-style-type: none"> <li>● Provision of warning signs.</li> <li>● Provision of clear instructions.</li> <li>● Existence of Walling.</li> </ul>	Low
<b>Mill access track</b>	Vehicles	Personal injury resulting from impact	<ul style="list-style-type: none"> <li>● Provision of restricted access and speed restriction signs.</li> <li>● Access restricted to some staff, pre-booked blue badge holders and delivery vehicles.</li> <li>● School parties to be escorted up and down lane by staff</li> </ul>	Low
<b>Outside Stairs (incl fire escape)</b>	Steps slippery when wet or icy	Personal injury resulting from slipping, tripping and falling	<ul style="list-style-type: none"> <li>● Provision of hand rail.</li> <li>● Provision of clear instructions.</li> <li>● Grit/salt treatment in winter conditions</li> <li>● Fire escape covered with wire netting for grip.</li> </ul>	Low
<b>Inside Stairs</b>	Steps	Personal injury resulting from slipping, tripping and falling	<ul style="list-style-type: none"> <li>● Provision of hand rail.</li> <li>● Provision of clear instructions.</li> <li>● Clear definition of edges in dark areas.</li> <li>● Children to use outside stairs for lower level only during schools visits, escorted by staff</li> </ul>	Low
<b>Flooring (incl sunken yard)</b>	Uneven surfaces	Personal injury resulting from slipping, tripping and falling	<ul style="list-style-type: none"> <li>● Provision of clear instructions.</li> </ul>	Low
<b>Wheel Pit/ Turbine area</b>	Danger of falling into wheel pit	Personal injury resulting from falling	<ul style="list-style-type: none"> <li>● Provision of guard railing</li> <li>● Access gates closed and bolted.</li> </ul>	Low
<b>Wheel Pit/ Turbine area</b>	Overhead pulley	Personal injury resulting from impact	<ul style="list-style-type: none"> <li>● Provision of clear instructions.</li> <li>● Sharp edged protected with foam cushion</li> </ul>	Low

<b>Machinery Not Operating</b>	Solid metallic object	Personal injury resulting from slipping, tripping and falling against machinery.	<ul style="list-style-type: none"> <li>Provision of clear instructions.</li> </ul>	Low
<b>Machinery Whilst Operating</b>	Solid metallic object with cutting tool/blade machining a wooden product	Personal injury resulting from: <ul style="list-style-type: none"> <li>Slipping, tripping or falling against machine</li> <li>Being hit by flying objects (e.g. wooden chips/shavings or broken tool)</li> <li>Contact with moving blades, tools or belts</li> <li>Inhalation of dust</li> <li>Excessive noise.</li> <li>Electric shock</li> </ul>	<ul style="list-style-type: none"> <li>Machinery only used by trained personnel or under supervision of trained personnel.</li> <li>Visitors instructed to stand clear of machinery whilst in operation or being set up.</li> <li>Water-powered machinery - Person assigned to Turbine Control Valve to shut down power in the event of an emergency.</li> <li>When machinery driven by auxiliary electric motor a person assigned to stand by the emergency stop control.</li> <li>Guards fitted to restrict access to belting and moving parts.</li> <li>First aid equipment and procedures.</li> <li>Dust extraction system operating on all modern machinery</li> <li>Appropriate use of masks, safety glasses and ear defenders.</li> <li>Visual check for broken insulation &amp; loose wires by operator.</li> </ul>	Low
<b>Team Turbine activity</b>	Risk of swallowing small objects i.e. bottle tops	Personal Injury, choking	Staff to supervise activity area and instruct children not to put things in their mouths, not to push, and to take care with sharp objects.	Low
	Risk of cutting fingers when using scissors	Personal Injury, cuts and scraps	Safety scissors will be used. Adult supervision of area	Low
	Risk of children poking themselves/ each other with kebab sticks	Personal Injury, cuts and scraps	Children will be instructed that sticks are sharp and advised to take care. Adult supervision, both mill staff and teachers. Misbehaviour will not be tolerated, and will be managed by school staff.	Low
	Edges of plastic bottles may be sharp when cut	Personal Injury, cuts and scraps	Children advised of possible danger. Use of blunt scissors results in a blunt edge of bottle. Adult supervision, both mill staff and teachers	Low
	Risk of swallowing water	Personal Injury	Clean, safe tap water will be used	Low

	Risk of spilled water, slips trips and falls	Personal Injury, cuts and scraps	Towel and mop on hand to clear up any split water Use of water by children will be outside as possible	Low
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**Teachers and group leaders are welcome to make an appointment to conduct their own risk assessment at the Mill if required. Contact Samantha Belcher on 01969 667320 to arrange this.**

## Tours and Activities

On arrival schools parties will be shown to the classroom where coats and bags can be stored during the visit and offered a comfort break after your journey. A typical visit to Gayle Mill begins with a welcome and health and safety briefing from Samantha our Education Co-ordinator.

During a short introduction the pupils will learn what to expect from their visit and be introduced to any volunteers helping on the day. If a pre-visit outreach session has taken place in school Samantha will review the session in a short recap before a guided tour of the Mill takes place. Larger parties may be broken up into smaller groups at this stage.

**Guided tour** - An introduction to the history of the Mill; from its cotton origins, to flax and wool production, harnessing the awesome natural power of water, and state of the art Victorian woodworking machinery. The story of the Mill is told during a guided tour where your pupils will see, hear, touch and smell the history of Gayle Mill.

They will handle samples of cotton in its various forms, turn on the turbine to generate electricity lighting up the wheel pit. They will view various physical clues in the building revealing historical evidence of the Mills past (for example wall paper in areas of domestic habitation).



### Team Turbine! Activity

Working in small groups pupils will have to work together and follow detailed instructions to construct a miniature working water turbine using a plastic bottle, cork and kebab skewer. We will then test the creations, getting them wet in the process.

The turbines will be yours to take back to school with you.

**Worksheets** - A number of worksheets are used to re-enforce learning undertaken during a guided tour. A word search helps children to learn to spell and recognise new vocabulary acquired during the tour.

At the end of a visit pupils will be regrouped and have the opportunity to review the visit. They will be asked *what new thing have they learnt today?* and *what did they enjoy the most?* This provides tangible evaluation data for both the Mill and your own records.

Each pupil will also receive a FREE Gayle Mill charity wrist band as a souvenir of their visit.

Visits take place either in the morning or afternoon, lasting approximately 2 – 2.5hours. An example itinerary can be seen below.

#### Example visit itinerary

<b>Approximate time</b>	<b>Activity</b>
<b>9:45am/12:45pm</b>	Arrival – Welcome form Samantha Toilet break if required
<b>10:00am/1:00pm</b>	Introduction (including health and safety briefing)
<b>10:10am/1:10pm</b>	Outreach session recap (if one has taken place) or Presentation of water wheel model (if not done in outreach session)
<b>10:30am/1:30pm</b>	Guided Tour of Gayle Mill
<b>11:00am/2:00pm</b>	Team Turbine Activity
<b>11:30am/2:30pm</b>	Turbine testing outside
<b>11:45am/2:45pm</b>	Overview and evaluation including presentation of wrist bands for pupils
<b>12:00pm/3:00pm</b>	Visit ends - Toilet break
<b>12:15pm/3:15pm</b>	Return to school

You are welcome to eat a packed lunch in the Mill before returning to school/on arrival. Please let us know at the time of booking if you would like to do so.

Times are approximate and can be altered depending on your journey time and school time table. Discuss these with Samantha at the time of booking to tailor a visit to your needs.

## **A Brief History of Gayle Mill**

Gayle Mill was built in 1784 by two related entrepreneurs, Oswald and Thomas Routh, who saw the business opportunities opened up by the building of a turnpike road from the west and the end of the American War of Independence which allowed a greater flow of raw cotton from the United States.

It started life as a cotton-spinning mill, powered by a 22' diameter overshot waterwheel, and over the next century, as economic conditions in the Dales changed, was also used for spinning flax (briefly) and then wool for the local knitting cottage industry in the valley. For a period in the 19th century, it was used for domestic accommodation (and it also housed military personnel during World War II)

In 1879 the Mill took on a new lease of industrial life when, due to advances in technology, it was converted into a mechanised sawmill. The waterwheel was removed and replaced with a Thomson double-vortex turbine, built by Williamsons (now Gilbert Gilkes & Gordon Ltd) of Kendal. The 10hp (7.46kW) created by the turbine drove a range of woodworking machinery (rack sawbench, circular saw, planner/thicknesser, and lathes) by a series of belts and pulleys off a central line-shaft.

In the early years of the 20th century, an electric generator was installed to provide lighting and from 1920 the Hawes Electric Company leased part of the Mill and turbine for their own generator. A gas engine (now removed) was also installed to be able to drive the generator when there was insufficient water to run the turbine. In 1925 a second turbine was put in to create greater capacity.

In 1959 all electricity supplies from the Mill to the outside world ceased, leaving the 1925 generator to supply all electrical requirements for just the Mill. The Williamson turbine continued to supply the motive power for the woodworking machinery until the business closed down in 1988.

Gayle Mill is now owned by the North of England Civic Trust (NECT) and operated by Gayle Mill Trust (GMT). After coming third in the national final of the BBC "Restoration" series in 2004, capital funds were raised by NECT to stabilise the building and restore all the water-powered systems and Victorian machinery. It took four long years of work to restore this treasure to its former glory.

Gayle Mill Trust has four main areas of responsibility; running the Mill as a historic visitor attraction, providing commercial wood services, electricity generation and heritage education and training. Educational activity at the Mill currently takes place as part of a Heritage Education and Skills Training Project funded by the Yorkshire Dales LEADER programme until December 2013.

We look forward to welcoming you and your pupils to Gayle Mill. For bookings and enquiries contact Samantha Belcher on 01969 667320 or email

[samantha.belcher@gaylemill.org.uk](mailto:samantha.belcher@gaylemill.org.uk)