



# WANDLE INDUSTRIAL MUSEUM

EDUCATIONAL INFORMATION SHEET supporting KS2 History & Science:

*H KS2 - a study of...a site that is significant in the locality*

*Sc KS2 – recognise that some mechanisms including...gears, allow a smaller force to have greater effect*

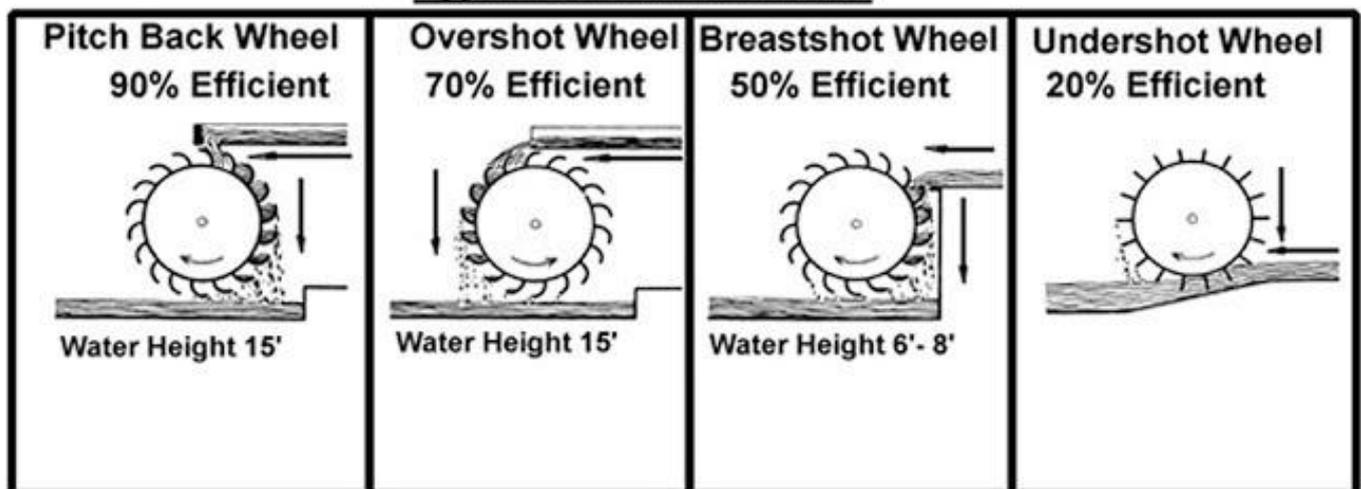
## WATER WHEELS AND WATER MILLS

According to the **Domesday Survey** of 1086 there were 13 mills along the River Wandle. These were used for grinding **corn or wheat** for making bread or used in brewing. By medieval times the **fulling of wool and metal working** had been added. In the 16<sup>th</sup> Century, **dyeing works and bleaching** were also found. Then during the 17<sup>th</sup> Century we see a diversity in manufacturing taking place with the establishment of **leather, dye, iron, gunpowder, copper and snuff mills**, and the popular **calico** printing works. More recently came the **flock, paper and parchment** mills.

Due to the fast flowing and reliable nature of the River Wandle, and its clean water, it was very suitable to drive water wheels. Water wheels, as we know them, started to appear during the medieval period. There are three common types of wheel:

- (1) The Undershot – *turned by water striking the bottom of the wheel*
- (2) The Breastshot – *turned by water striking the middle*
- (3) The Overshot – *turned by water striking the top*

### Types Of Water Wheels



Medieval wheels would have been made of wood, but later they were replaced by cast iron, which was stronger and harder wearing. Along the Wandle most of the wheels were undershot or breastshot. There were some overshot in **Carshalton and Waddon Mills**; overshot wheels were proved to be the most efficient type.

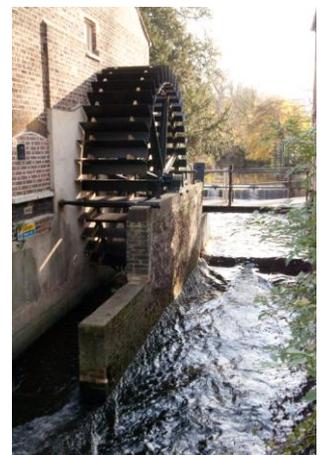
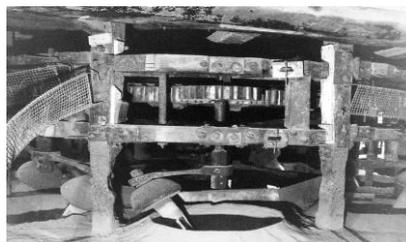
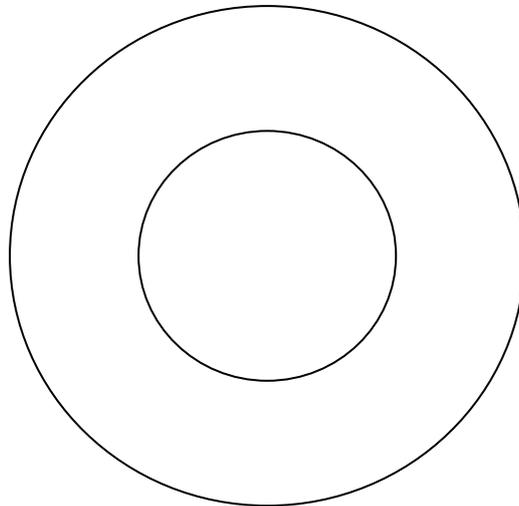
The water wheels drove the machinery located inside the mill which would be used for **grinding (e.g. corn and snuff) or hammering (e.g. iron or leather)**. Grinding stones were used, and samples can still be seen near the old **Snuff Mill in Morden Hall Park**! Later water wheels were used to provide electricity, a process known as *Hydroelectricity or Hydropower*. Today the water wheel at **Merton Abbey Mills** provides power to the pottery workshop.

## Some suggested follow-up activities and research:

- Why was the River Wandle a popular place for water mills?
- Why do you think the **OVERSHOT** wheel proved to be most efficient?
- See if you can complete these industries which used water mills along the Wandle:

*C---- S--- G----- L----- P---- P----- F---- C----- I--- T-----*

- Find out what the **MILL RACE** and the **TAIL RACE** are on a water mill.
- Where in the world were water wheels first used?
- Create a drawing of a water wheel; draw a circle, and then divide it **equally** to show the **PADDLES** along the edge. How many can you fit into the one below?  
What might be the best **number** and **shape** of paddles for a wheel to have?



### What the Wandle Industrial Museum can do for you:

The Museum is able to cater for school groups, either at the museum itself or by visiting your school, to learn more about the **history of water mills along the River Wandle**. There are many old pictures, maps and videos of the **Wandle Mills**, as well as **working models** which show the internal machinery and how it turns the gearing. There are also displays of some of the materials produced by these mills in the past.

For further enquiries or to make a booking please contact us as below:

**The Wandle Industrial Museum 020 8648 0127 or email [office@wandle.org](mailto:office@wandle.org)**