

INDUSTRY



EDUCATION PACK

This pack accompanies the film "Industry" which can be viewed online at www.heritagequay.org

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INTRODUCTION

This film and pack have been developed to introduce students to the industrial and manufacturing collections in the University of Huddersfield's archives.

The archives contain many more collections than can be covered here and educators should refer to the online catalogues at www.heritagequay.org or contact Heritage Quay on 01484 473 168 or email archives@hud.ac.uk to find out more or book a visit.

This pack can be used to support the following areas of the curriculum:

- KS1 Local History Study “significant local events, people and places”

Hopkinsons was a Huddersfield firm of great significance and it is likely that many of the children's parents and grandparents were connected with the firm. The Hopkinsons collection ranges from the technical aspects – valve designs and drawings, to the human - including many copies of the inhouse magazine, Firm Friends, along with a wealth of photographs. Children could focus on the firm's contribution to the industrial wealth of Huddersfield, or consider the life of Joseph Hopkinson, its founder.

- KS2 Local History Study “study of an aspect or theme in British history that extends pupils' chronological knowledge beyond 1066”

Huddersfield's industrial success was closely allied to the town's textile trade, which began with the first market rights granted in 1671 to the Ramsden family. The town offers a model example of the links between textiles, transport, manufacturing, social conditions and education, and reflects the development of the industrial revolution in the north of England.

- KS3 Ideas, political power, industry & Empire: Britain 1745-1901

The Fabrics of India sample books provide an ideal starting point for students considering the expansion of the textile industry during this period.

Other relevant curriculum areas include KS2 art & design/Design technology- using the Fabrics of India and University Textile books or Science/forces/– investigating valves and air/water pressure.

WATCHING THE FILM

The film's narrative and content are designed for children aged 5-11 years and will also be useful for older students. It gives an overview of the development of the textile industry in Huddersfield and associated manufacturing trades, focussing on valve makers, Hopkinsons, whose history stretches back almost 175 years.

It is suggested that teachers watch the film before showing it to students, and become familiar with the contents of this pack so that they are able to answer any questions. The film is 3 minutes and 1 second long and includes stopping points with questions which are listed below. These can be used as a starting point for classroom activities or a way of finding out what students already know.

The questions are as follows:

1:13 Can you find the market cross in Huddersfield, where cloth used to be sold?

1:17 How many buildings can you find in the town with the Huddersfield coat of arms?

ANSWERING THE QUESTIONS

1:13 Can you find the market cross in Huddersfield, where cloth used to be sold?

The Market Cross is a grade 2 historical landmark situated in Market Place, Huddersfield. It was erected in 1671 to mark the granting of a royal charter to the Ramsden family, enabling a market to be held on the site. It was close to the parish church and on the main route through what was then a small village. A century later, the cloth trade had moved to the Cloth Hall, built by the first John Ramsden's grandson, and situated where Sainsbury's is today.

1:17 How many buildings can you find in the town with the Huddersfield coat of arms?

The Huddersfield coat of arms bears the motto *Juvat Impigros Deus*, meaning God Defends the Diligent (or in Yorkshire, God Helps Those Who Help Themselves). The arms are based on those of the Ramsden family, who originated from Byram. The crest includes rams' heads to represent the wool industry. There are many examples, including:

- On the covered market
- On the Ramsden building on the university campus
- On the Town Hall

And also:

- On the Britannia buildings in Briggate, Elland
- On the side of 200 The Strand, London

POST FILM ACTIVITY SUGGESTIONS

HUDDERSFIELD TOWN TRAIL: Take students on a walk through the town and look for evidence of its industrial past and the Ramsden family in street and building names, or spot the Huddersfield coat of arms. Visit the site of the Market Cross, the covered market, the former cloth hall and the indoor market and shopping malls to compare buildings and shopping habits over the past 150 years.

- Construct a model of the buildings in Lego or use cardboard boxes
- Take photographs of the buildings from unusual perspectives to create a visual mystery tour and encourage children to look closely at their environment

HOPKINSONS: Investigate the company archives to curate a class exhibition:

- Track down personnel from the Firm Friends – carry out oral history interviews with former employees (talk to our Participation Officer about this)
- Research the life of Joseph Hopkinson and sons and create a family tree
- Consider commissioning a Huddersfield based community theatre company to create an Imaginary Community with students
- Design and make working valves to control air and liquid
- What is the firm's global reach – display on a map (see end pages for firm history)
- Collect objects with country of origin labels. Plot their links with Britain and compare with Hopkinson's global reach.
- Find out what other local products were shown at the Great and London exhibitions. (There was a gallery of bad design!) Write a postcard telling the people back home what you've seen or create an exhibition catalogue

SAMPLE BOOKS are ideal for developing critical thinking skills. Encourage students to consider the following:

- Origin: who made this, when and where?
- Materials: what is it made from?
- Process: how was it made? i.e. technology and labour force
- Purpose: why? To demonstrate wares – what was the audience and why?
- Meaning: what does it mean? What does it tell us about the reach of the textile industry?
- Design and print fabrics for a given purpose
- Create a moodboard or lookbook

VISIT THE ARCHIVES: Handle items from the collections and:

- Use them to inspire print designs
- Artwork or creative writing
- Curate your own exhibition

IMAGES

The images appearing in the film may be subject to copyright. They include items from the Fabrics of India collection, and the Albert Booth Photographic and Hopkinsons company archives. In order of appearance:

Advertising material from the Hopkinson archive

Exterior and interior of Huddersfield covered market, Brook Street

Victorian mill chimney, from the Albert Booth photographic archive

University Textile Sample Book (wool)

Huddersfield railway station, Albert Booth photographic archive

University Textile Sample Book

Huddersfield coat of arms (from the covered market)

Fabrics of India Sample Books (cotton)

Advertising material from the Hopkinson archive 1869

Believed to be Joseph Hopkinson at the London Exhibition 1862

Hopkinson's Yard, from the Hopkinson archive

Guide and map from the British Empire Exhibition 1924

Combined stop and return valve, salesman's sample, Hopkinsons archive

Promotional material early 20th century, Hopkinsons archive

Hopkinsons company group photograph

Inertia ring and bearing for 93 inch diameter damper, 8 tons, Holsets archive

The image on the cover of this pack is of a float representing Huddersfield based valve manufacturers Hopkinsons, in the Trades Council Procession, 1935

SCRIPT

When you visit Heritage Quay at the University of Huddersfield, you'll see Victorian buildings in the town like the railway station and the covered market. You'll also see evidence of the textile industry in the town, like the canal, old mills and warehouses, all surrounded by green hills. They're all linked by one thing – sheep's wool.

The hills around Huddersfield meant it was difficult to grow food but they were good for sheep, so people began to weave cloth from the wool and sell it to supplement their family income. They took the cloth to sell in the market in the nearby village of Huddersfield. The trade in cloth grew over time, and more mills were built to weave not just wool, but cotton and linen too.

The canal was built to take cloth to other, bigger towns like Leeds, Manchester and Liverpool. Later on, Huddersfield railway station was built, and manufacturers could send their cloth by rail to Liverpool docks. Here it was put onto ships bound for places like India, Nepal and Uzbekistan. The wool industry became so important to the wealth of Huddersfield, that sheep are included in the town's coat of arms.

- *Can you find the market cross in Huddersfield, where cloth used to be sold?*
- *How many buildings in the town can you find with the Huddersfield coat of arms?*

Sample books like this helped the Huddersfield mill owners to understand what kind of textiles, patterns and colours would sell well in these new markets.

More customers meant more cloth, and that meant that faster machines were needed in the mills. Engineers were needed to design and maintain the machines, and chemists were needed to create new dyes to colour the cloth. People needed special training to do these jobs, and, this is how the University of Huddersfield eventually came about.

At this time, the factories and mills in Huddersfield and the rest of the country ran on steam power. In the early days, boilers often exploded, and many people lost their lives. This Huddersfield man called Joseph Hopkinson began to manufacture safety valves for boilers.

Joseph began making valves in a room over his shop in Huddersfield. He was a great promoter as well as an engineer and made sure that word spread about his new invention. Soon his valves were in use all over the world and were so successful that insurance companies offered cheaper rates if Hopkinson valves were fitted. 170 years later, Hopkinson valves are still being made and helping to prevent accidents in the oil and power industries.

You can find out lots more about Huddersfield's engineering and textile industries here at Heritage Quay.

FURTHER LINKS AND RESOURCES

[http://www.gracesguide.co.uk/J. Hopkinson and Co](http://www.gracesguide.co.uk/J._Hopkinson_and_Co) - information about the firm's industrial history

<http://www.vam.ac.uk/blog/section/fabric-of-india> - Victoria and Albert museum retrospective exhibition of the Fabrics of India with associated activities

https://www.kirklees.gov.uk/leisure/countryside/pdf/routes/discover_hudds_historic_buildings_trail.pdf historic buildings trail

www.discoverhuddersfield.com – other trails and historic information

<http://www.explainthatstuff.com/valves.html> simple textual and visual explanation of common types of valves, with their uses and curriculum links

www.choltheatre.co.uk a community theatre company who will work with children to create an Imaginary Community, bringing to life the stories of significant people and events

WEIR VALVES & CONTROLS UK LTD (formerly Hopkinsons)– Heritage Landmarks

1843 - Joseph Hopkinson started in business in an upstairs room at East Parade, Huddersfield manufacturing fittings for steam engines and boilers.

1845 - The firm was immediately successful and moved to premises at Spring Place, off Lockwood Road. Later the firm occupied a small factory on Leeds Road where many of the new products which were to make the Hopkinson's name world famous were designed and developed to meet the demands of the Industrial Revolution.

1851/2 - Compound Safety Valve patented and exhibited at the Great International Exhibition. Company received a medal and certificate signed by HRH Albert, the Prince Consort. Steam Users Association, antecedents of the boiler insurance companies we know today offered a 10% reduction in premiums if a boiler was fitted with a Hopkinson's Compound Safety Valve.

1854 - Hopkinson's Water Gauge and mercurial type steam pressure gauge introduced. Company introduced a patented "Economical Self- Cleansing Boiler" designed to work at 100lb/sq.in. at a time when anything in excess of 40lb/sq.in. was considered a high pressure.

1857 - Hopkinson's Steam Engine Indicator introduced to improve the efficiency of an engine by re-setting the valve timings. Applied to the engines of the SS Great Britain, the first ocean going ship to be built of iron and to have screw propulsion, total output was increased from 686 to 1,663 horsepower.

1860 - Robert and Thomas Blakeborough commenced manufacture of small valves and fittings at the plumbing business founded by their father Joseph at Brighouse in 1856.

1864 – Joseph Blakeborough acquired separate premises for valve production.

1865 – Local engineering exhibition awarded "Medal of Excellence" to Joseph Blakeborough.

1867 – John Addy and Joseph Hopkinson, sons of Joseph the founder joined the business which then became J. Hopkinson & Co.

1870 – The Hopkinson's Deadweight Safety Valve introduced and with its weights contained within a lockable cover, provided a valve which overcame the problems of interference by irresponsible or incompetent operatives.

1871 – Leeds Road factory of J. Hopkinson & Co became too small for increasing production requirements. Company moved to larger facilities off Viaduct Street near the centre of Huddersfield where it remained for the next 33 years.

1874 – Blakeborough received order for their biggest product, 24 inch bore sluice valves.

1880 – Blakeborough supplied oil valves to Great Britain's first seagoing steam powered oil tanker.

1881 – Hopkinson's Parallel Slide Gate valve patented.

1885 – Hopkinson's supplied sluice valves for the City of Cardiff's reservoirs and the Thirlmere aqueduct project for Manchester Corporation.

1890 – Hopkinson's introduced the "Absolute" Water Gauge. Fully automatic in both arms it prevented the escape of steam and water in the event of breakage of the gauge glass.

1903 – New factory at Wheathouse Road Birkby.

1904 – Hopkinson's Britannia Works, Wheathouse Road opened. In the same year, Hopkinson's collaborated with Dr. Sebastian Z. de Ferranti, the pioneer of electric power.

1906 – Blakeborough supplied the first sluice valves to be operated by electric motor to W. H. Allen & Co Ltd.

1910 – Hopkinson's have depots and showrooms in thirty cities around the world, including a showroom on the pier at the North of England's most popular seaside resort, Blackpool !

1912 – Hopkinson's Steel Foundry opened.

1914 – Hopkinson's engaged in war work for the armed forces.

1926 – J. Hopkinson & Co became a Public Company with a capital of £700,000 and taking the title Hopkinson's Ltd.

1930 – Hopkinson's manufactured the first Alloy Steel valves for a service duty of 1000deg. F.

1938 – Sootblowers added to the Hopkinson's range of products.

1939 –Hopkinson's manufacture valves for industry and the Admiralty

1954 – Blakeborough and Hopkinson's are the principal valve suppliers to the world's first industrial scale nuclear power station at Calder Hall.

1960's – Hopkinson's supplied two thirds of the valve requirements for the UK's 25 new fossil fired power stations.

1965 – Blakeborough becomes a member of the Hopkinson's Holdings Limited Group of Companies.

1970's – Hopkinson's supplied Main Steam Isolation valves for PWR units in France, Spain Korea, USA and Denmark.

1973 – Hopkinson's becomes the first valve manufacturer outside of North America to be awarded the "N" and " NV " stamp by the American Society of Mechanical Engineers Certification.(For the supply of isolation, check and safety valves for nuclear power stations)

1981 – Hopkinson's repair and servicing subsidiary opened in Cardiff.

1989 – Financial control of Hopkinson's Ltd acquired by Weir Group.

1993 – Hopkinson's introduced range of Valflow Oil and Gas Industry valves. Later to be known as MAC Valves.

1996 – Acquisition of Batley Valves adds a range of butterfly control valves to the Hopkinson's product portfolio.

1998 – Acquisition of Sevim with its range of pilot operated nuclear safety valves and Sarasin ASME VIII safety relief valves opens up wider markets for Hopkinson's Ltd.

2002 – Formation of Weir Group Valve Division whereby the previous companies of Hopkinson's Ltd, Atwood & Morrill, Blakeborough's, Batley Valve, Group Sevim, Sarasin-RSBD, Tricentric and MAC Valves became brand names united under the divisional name of Weir Valves & Controls.

2005 – Wheathouse Road works of Weir Valves & Controls closed ending 101 years of manufacturing on the Birkby site. Company moves to the Britannia House facility at Huddersfield Road Elland.

2013 – Weir Valves & Controls UK Ltd celebrated 170 years.

2018 - 175 years!