

Information for Teachers

Introduction

At Cromford Mills we aim to engage learners in enjoyable, experiential and interactive learning experiences to enhance and deepen an understanding of the significance of Cromford Mills and the life and times of Sir Richard Arkwright. Through a variety of activities including tours, talks, hands-on making activities and role play linked to curriculum subjects and beyond we offer learning experiences that develop skills including investigation, enquiry, questioning and analysis. The site is considerably relevant to the teaching of History, Geography, English, Science and Design and Technology. This resource focuses on the History curriculum with suggested cross curricular links.

Recognised as part of Derwent Valley Mills UNESCO World Heritage Site, Sir Richard Arkwright's Cromford Mills is significant as the first successful water-powered cotton mill and influential factory system. The design of the mills, the machines, the factory working processes were replicated across the world, influencing industrial developments and contributing to the wealth of the British economy.

Resource

Designed for Key Stages Three and Four this resource enhances the teaching and learning of 18th and early 19th century life, Arkwright's role in the industrial revolution, social working and living conditions and the significance of Cromford Mills. It is suitable as a stand-alone resource, however a visit to Cromford Mills is recommended to enhance and reinforce learner's knowledge, skills and understanding.

The entire resource is made up of four parts:

Part 1: Teacher's Notes, outlining key questions, curriculum links, History schemes of work, a list of resources, chronology of the mills and significant technological developments.

Part 2: Information Sheets, explaining the significance of Arkwright, the working and living conditions of mill workers, water power and the building of the mills, transport in the 18th century and the cotton industry.

Part 3: Source Packs, designed to support the teaching of the schemes of work, with images and extracts from newspapers and diaries.

Part 4: Activity Sheets, linked to source documents and the story of the site.

Key Questions

- What is the importance of Cromford Mills and how does it link to the Industrial Revolution? How typical was Cromford compared to other mill sites?
- Who was Richard Arkwright and why was he important? What other significant innovations were made during the 18th and 19th centuries?
- When was the railway and canal developed at Cromford? How did transport contribute to the development of the industrial age?
- How did the development and decline of Cromford Mills occur? What made Cromford a good site for a mill complex?
- How did the site operate? Day in the life of working people, the management of the mill, the site complex and village.
- What changes occurred in working practices and society due to the Industrial Revolution? What were the social consequences of the Industrial Revolution?
- Compare working conditions at Cromford Mills, the buildings, treatment of workers, wages, with other 18th century and early 19th century mills. How did standards of living differ during industrialisation?
- Did the treatment of workers improve due to government legislation?
- How did technological developments influence the pace of the industrial revolution and what concerns and issues were raised in the 18th century? Are any of these issues still prevalent today?

History Curriculum Links

The following pages outline the relevant links to the National Curriculum History Programmes of Study with suggested schemes of work for Key Stage 3 working towards aspects of the Key Stage 4 local history.

- Pupils should extend and deepen their chronologically, secure knowledge and understanding of British, local and world history, so that it provides a well-informed context for wider learning.
- Pupils should identify significant events, make connections, draw contrasts, and analyse trends within periods and over long arcs of time.
- They should use historical terms and concepts in increasingly sophisticated ways.
- They should pursue historically valid enquiries including some they have framed themselves, and create relevant, structured and evidentially supported accounts in response.
- They should understand how different types of historical sources are used rigorously to make historical claims and discern how and why contrasting arguments and interpretations of the past have been constructed.
- In planning, to ensure progression in British, local and world history, teachers should combine overview and depth studies to help pupils understand both the long arc of development and the complexity of specific aspects.

Relevant themes explored in this resource are, Britain 1745 – 1901, Britain as the first industrial nation, the impact on society and local history studies. Exploring in more depth industrialisation in the locality and how that impacted on society; socially, culturally, economically and politically.

History Scheme of Work

Enquiry Explain how significant Sir Richard Arkwright's Cromford Mills were to the industrialisation of Britain

	Focus	Learning focus	Content	Outcomes	Resources	Curriculum Links
1	Introduction to Industrial revolution	How different was life after industrialisation? post 1770s compared to pre 1770s?	Identify changes in transport, power, energy, population growth and discuss the consequences: health, wealth, poverty, economy. Compare images before, during and after Arkwright's lifetime	Develop knowledge of local and world history and influences on changes in social, political, economic history	Student own research plus relevant sources form source sheets Information Sheets: 2. The Location of the Mills 5. Transport and Roads 6. The Cotton Trade	History 1750 – 1900, connections between local, regional and national
2	Who was Richard Arkwright and what was his role in the industrialisation of Britain?	What did Arkwright achieve? How was he perceived?	Story of Arkwright: his family life and his work. Investigate why Cromford was a suitable location for a mill? Contextualise with other industrial changes. Compare with other historical figures e.g. Josiah Wedgewood	Develop knowledge of Arkwright and begin to question and analyse his role in industrialisation	Information Sheets 1, 2 Source Sheet : Images of mills, inventions and water courses.	Pursue historically valid enquiries including some they have framed themselves
3	How influential was Arkwright?	What do we know about Arkwright's character, attitudes and motivations? How influential was he?	Discuss why Arkwright was considered to be father of the industrial factory system? Source analysis. Study the sources, perspectives, bias and accuracy. Identify factory locations in England and abroad inspired by Arkwright's Mills.	Use different types of historical sources, identify and interpret contrasting arguments, how interpretations of the present and past changed over time	Information Sheet: 1. Richard Arkwright 2. Location of the Mills 3. 18th and 19th Century Life 4. Mill Construction and Water Power	How and why contrasting arguments and interpretations of the past have been constructed
4	What wider social, cultural, economic changes were influenced by Arkwright's work?	VISIT to Cromford Mills, introduction to working lives and conditions, changes to the village and population	Consider different accounts of living and working in Cromford. Develop knowledge of change and consequence. Visit to key sites, workers houses, mills, water courses	Research information about Arkwright, explain the impact, consider bias and reliability of sources. Interpret historical sites	Source Pack 3: Advertisement for Workers Activity Sheet 2	Pursue historically valid enquiry

History Scheme of Work

	Focus	Learning focus	Content	Outcomes	Resources	Curriculum Links
5	How did the lives of working people change?	Explain the impact Arkwright and industrialisation had on working lives? Who worked there and what were the working conditions like?	<p>Analysis of conditions in factories in 18th and 19th century</p> <p>What were the consequences of the factory system for owners and workers. How does Cromford Mills compare with conditions in other mills?</p>	<p>Write a report as an inspector of a factory at Cromford and a comparable mill</p> <p>Make connections, draw contrasts with other evidence and social, living working conditions, contrast city and county. Consider changes over time and into 19th century, the factory acts and reforms, cause and consequence</p>	<p>Information Sheet 3: 18th and 19th Century Life</p> <p>Source Pack 2: Working Conditions</p> <p>Source Pack 3: Advertisements and Worker's Housing</p> <p>Activity Sheet 3</p>	Create relevant, structured and evidentially supported accounts in response to historically valid enquiries
6	Why was there resistance to technological change?	<p>What support and opposition did Arkwright face?</p> <p>How favourably is he portrayed in history?</p>	<p>Consider the arguments for and against using new machinery and the mills. Why was there opposition to his plans?</p> <p>Analyse the sources</p>	Historical and contemporary arguments for and against technological advancement	<p>Source Pack 3: Views on Machine Manufacturing</p> <p>Source Pack 1: Opinions About Arkwright and His Work</p>	Contrasting arguments, analysis, causation, change and consequence
7	Explain the impact of Arkwright's Mills locally and nationally	Positive and negative portrayals of the mills and social, economic changes	Debate the positive and negative effects of the mills on people, places, economy, work and society	Understand and analyse the wider impact of Arkwright's factory system	<p>Information Sheet 2: Cromford Mills and Sheet</p> <p>Information Sheet 4: Mill Construction and Water Power</p> <p>Source Pack 1: Opinions About Arkwright and His Work</p> <p>Source Pack 3: Views on Machine Manufacturing, Festivals and Celebrations</p> <p>Source Pack 4: Images of the Mills and Arkwright's Inventions</p>	Extend their knowledge 1750 - 1900
8	Changes during industrialisation: transport, church, crime	The development of industrialisation: understand transport and road conditions 1750s onwards and contribution to industrial growth	The canal, railway transport, increased trade. Use images and sources to identify road and transport conditions. What improvements were made?	Understand how other technological developments contributed and potentially affected the prosperity of the mills	<p>Information Sheet 2. The Location of the Mills</p> <p>Information Sheet 5. Transport and Roads</p> <p>Information Sheet 6. The Cotton Trade</p> <p>Source Pack 5</p>	Make connections, draw contrasts

Curriculum Links

Subject	Curriculum Links	Activity
History and English	Britain's transatlantic slave trade, effect and eventual abolition	Examine the cotton trade from 14th century to present. Reflect on changes and industrial developments slavery and abolition. Evidence linking Arkwright's Mills to slavery has not been discovered. How might the Mills have been indirectly linked? How ethically sourced are goods today?
Geography	Tourism, man-made solutions and problems, water, flooding	Rivers, management of flooding, man-made solutions and problems, physical and human features. Explore Cromford Mills as part of Derwent Valley UNESCO World Heritage Site and a tourist attraction. What does that status mean for the site and Derwent Valley?
History and English	Participating in debate, reflecting on the past, changes in perceptions over time	How were people affected by technological developments? Skilled workers losing their jobs to unskilled workers? Discuss issues for and against industrial changes.
English	Writing for a range of purposes and audiences, expressing opinion, participating in debate, writing scripts	<p>Reading: analyse the advert in terms of their register, vocabulary, and grammar. Create a job description for a 10 year-old child.</p> <p>Analyse the song in terms of rhyme and metre and add a verse dealing with the 'wreckers'. Incorporate it into a script for a radio programme on the mill.</p> <p>Spoken language: formally debate the use of child labour, still prevalent in some parts of the world. Should children be allowed to work under the age of sixteen? Organise a 'hot seating' session where pupils prepare questions to put to Arkwright, as in the Peel committee meeting.</p> <p>Writing: an imaginative written diary of a child working in the mill thinking about issues with night working</p> <p>A formal letter of complaint/praise from a mill visitor to Arkwright complaining or congratulating the Mill's working conditions.</p>

Resources

Information Sheets:

1. Richard Arkwright
2. The Location of Cromford Mills

3. 18th and 19th Century Life
4. Mill Construction and Water Power

5. Transport and Roads
6. The Cotton Trade

Pack	Title	Sources	Type
1	Opinions about Arkwright and his work	Edward Baines, 1835 Historian Matthew Boulton letters, 1781 and 1786 R S Fritton, 1989, Historian in The Arkwrights, The Spinners of Fortune. Sylas Diary Richard Guest, Historian 1823 Derby Mercury, Reporting Arkwright's death, 1792 The Torrington Diaries Portrait of Sir Richard Arkwright and Cromford by Night by Joseph Wright of Derby	Publication Letters Publication Diary Publication Newspaper Extract Diary Images
2	Working conditions for children	Joseph Farington Diary Joseph Farington Diary Derby Mercury	Diary Newspaper
	Conditions at Cromford Mills	Richard Arkwright Statement to the Select Committee 1796	Select Committee Report
	Conditions at other mills	Account by J Farriar R Blincoe account	
3	Adverts for employment	Derby Mercury 1771 Derby Mercury 1781	Newspaper
	Worker's Housing	Plan of Workers Houses Description of houses by J Farey, c1815	Plan Publication
	Views on Machine Manufacturing	Ralph Mather, supporting skilled workers Machine Wrecking Session order Letter in Derby Mercury supporting Arkwright and machines	Written accounts Newspaper
	Festivals and Celebrations	Song written by worker about Cromford Mills Image of Celebration, unknown artist	Song Image
4	What did Arkwright Invent?	Image of an old wheel at Cromford Mills Image of Water frame Diagram of Water Courses	Image Conservation Report
	Images of the Mills	Four 18th century images of the mill and location	Images
5	Transport	Description of changes to roads Description of layout – the bridge Description of road conditions monthly magazine 1804 View of mill from Greyhound pub	Written accounts Image

Chronology

23 December 1732	Richard Arkwright born in Preston	1777	Greyhound Hotel built, originally named The Black Dog
Late 1740s	Apprentice to a Barber	Late 1770s - early 80s	Rapid building of other mills by Arkwright in Derbyshire. Bakewell (1778) Wirksworth (1780) Cressbrook (1783). Other mills were licensed to use his machinery design for a substantial fee
1750s	Manages his own wig and wig dye business		
31 March 1755	Marries Patience Holt	1779	Rioters attack Arkwright's mill in Birkacre Lancashire
19 December 1755	Son Richard is born	1781	Arkwright's second patent had been contested and declared invalid. Mill owners could now use his machinery/design without having to pay.
6 October 1756	Patience Holt dies		
24 March 1761	Richard Arkwright marries Margaret Biggins	1782	Arkwright purchases Willersley Farm Estate
20 December 1761	Birth of daughter Susannah	1785	Construction of Weavers Workshop
1762 - 1764	Arkwright is owner of the Black Boy Public House, Bolton	1785	First mills extended
1764	Owned Barbers shop in Churchgate Bolton	1785	In February Arkwright successfully overturns previous judgement and the patent is restored. In June the patent is declared invalid and lost permanently.
1764	Ellen Arkwright born (dies in infancy)	1785	Sunday School formed by Arkwright
1766	Prototype of spinning frame completed by Arkwright	1786	Arkwright is Knighted and construction of Willersley Castle begins
1768	Arkwright moves to Nottingham (at a similar time to James Hargreaves with his spinning jenny)	1787	Arkwright is made High Sheriff of Derbyshire
1769	Arkwright purchases site for his first mill at Hockley	1789	Sir Richard Arkwright steers Cromford Canal Bill through Parliament
1769	Arkwright's first patent for spinning machine. Arkwright began to set up an animal powered mill at Hockley, near Hargreaves mill. Mobs damaged Hargreaves machines	1790	18th century cottage converted to Village Lock-up
1770	Samuel Need and Jedidiah Strutt partner with Arkwright to raise money for patent, fees, rent, construction	1792	Arkwright dies
Early 1770s	Margaret Biggins leaves Arkwright	1790s	Cromford Canal Wharf developed by The Cromford Canal Company.
1771	Partners lease site at Cromford and build their first water powered spinning mill	1795	24 hour working at Cromford Mills ends
1774	Duty reduced on home produced calicoes, cotton can now compete on equal terms with other materials	1796	Richard Arkwright Jr moves into Willersley Castle
1775	Arkwright acquires his second patent for a carding machine	1796	Cromford Canal Wharf open
1776	Construction of a seven storey second mill at Cromford	1796	Construction of Mill Manager's House
1777	The first rows of workers' housing are erected in Cromford	1797	St Mary's Church opens
		1803	Arkwright Junior is a millionaire

Chronology

1821	Cast iron aqueduct replaces wooden structure
1824 - 1830	Cromford and High Peak Railway constructed
1826	Last profit made at Cromford Mills
1837	Miners divert water from Cromford Sought into Meerbrook Sough
1839	Richard Arkwright Jr loses the dispute over Cromford Sough water rights
1843	Richard Arkwright Jr dies, worth 3.25 million
1890	Second mill destroyed by fire
1895	Buildings 1,8,9,10 and 14 leased to a Laundry other parts of site are used as a Brewery and as storage
1921	Most of the site is leased to Cromford Colour Works
1924-25	Arkwright family sells the site to Cromford Colour Works
1925	Arkwright family move out of Willersley Castle
1927	Willersley Castle brought by Methodist Guild
1929	Top two storeys of first mill destroyed by fire
1961	Fire damage to Barracks buildings
1979	Arkwright society purchases most of the site
1996	HRH Prince of Wales visits site
1996	HRH launches the decontamination programme which cleared the site of lead chromate.
1997	Stinking Hellebore seeds from Scarthin Rock collected for the Millennium Seed Collection at Kew.
2001	Cromford Mills as part of Derwent Valley Mills obtains UNESCO World Heritage status
8 Nov 2002	Cast iron aqueduct destroyed by impact from a lorry
2004	HRH visits site a second time presenting a plaque awarding the Cromford Mills Project Regeneration through Heritage Exemplar status.

Chronology of Inventions of 18th century	
1733	John Kay invents the flying shuttle
1759	Jedidiah Strutt's Derby rib machine – a mechanism placed in front of the stocking frame enabling the fashionable ribbed stocking to be made by machine instead of by hand. Other inventions followed to create every kind of mesh
1764	James Hargreaves invents the spinning jenny
1764	Machine adapted to make eyelet holes.
1767	Velvet was made on a stocking frame
1769	Brocade was made on a socking frame
1769	James Watt develops an improved steam engine
1785	Cartwright invents and patents the steam powered mechanically operated loom in Doncaster