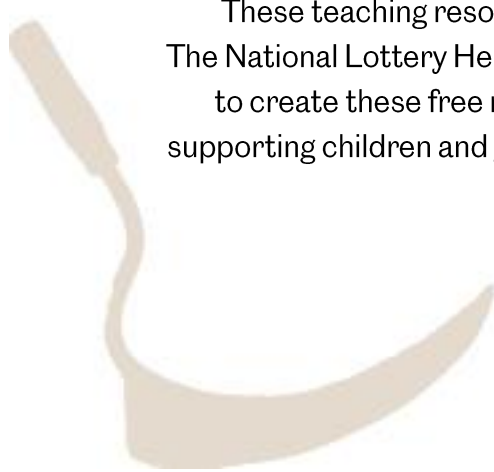




Abbeydale Industrial Hamlet

Free Self-Guided Resource for Schools

Key Stage 2



These teaching resources were made possible as part of Embrace Abbeydale, with The National Lottery Heritage Fund. Thanks to National Lottery players, we have been able to create these free resources for teachers, which give information and guidance on supporting children and young people on a self-guided visit to Abbeydale Industrial Hamlet.





Welcome to Abbeydale Industrial Hamlet

The historic heart of Sheffield's steel story

The early factory might look like a far quiet cluster of farm buildings, but there were once the noisy workshops and bustling homes of Sheffield's steel workers and their families.

Generations of skilled workers earned their living here making crucible steel to a secret recipe. This steel was crafted into high quality tools and vital farming tools that were exported around the world.

Abbeydale Works was once one of the largest water-powered industrial sites in Sheffield.

The thunderous noise of the big hammers and the roar of the grinding wheels would have rang out across the valley. Today, the site and many of its remarkable stories have survived for us to explore.

Crucible steel made Sheffield famous, creating great wealth for a select few. The impact of the steel industry on people, landscape and nature are still being felt today. We are working towards understanding this complex legacy.

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Abbeydale Works (view from the east) (Image courtesy of the Sheffield City Council)

1. Blacking Shop

Sophies were packed here ready for export.

2. Hand Forges

Workshops where skilled artisans still make hand tools.

3. Crucible Furnace

The only intact crucible steel factory in the world.

4. Tilt Forge

The forges and the hammers where metal was shaped into blades.

5. Water Wheels

The water-powered heart of Abbeydale Works.

6. Grinding Mill

Where skilled grinders put a sharp edge onto blades.

7. Counting House

The business hub of the site, where orders were made, and workers were paid.

8. Workers' Cottages

Homes for Abbeydale workers and their families.

Also look out for:

Manager's House and Garden
Family home for the Manager beside the River Sheaf.

Boring Shop and Millwright's Chamber

Where sophie blades were drilled, and waterwheels repaired.

Steam Engine and Boiler House

The age of steam power arrives at Abbeydale.

Abbeydale Dam Pond

Holding river water, ready to power the machinery.



Image courtesy of the Sheffield City Council



Image courtesy of the Sheffield City Council



Welcome to Abbeydale Industrial Hamlet

The team at Abbeydale Industrial Hamlet have put together these self-guided resources so that visiting school groups can better understand the site and its place in history. We hope to make visitors aware of the importance of sites like this, but also to help them relate to the people of Sheffield's history. These questions are designed to equip teachers with some helpful information about the hamlet, as well as some questions to help the students engage with the past. Much of history is better understood as a series of questions and interpretations, rather than simple answers about what happened. We hope to encourage students to relate to and empathise with those who came before us. Above all, we have designed these resources so that students and teachers will get the most out of their visit to Abbeydale Industrial Hamlet.

The resources are designed in a circular way, meaning that you can begin at any part of the museum and continue from there. However, we recommend that visitors begin at either the Dam or the Manager's house, working either forwards or backwards through the resources. If possible with staff numbers, teachers may want to split students into two groups and start each group from different areas of the site.

We hope you enjoy your visit to Abbeydale Industrial Hamlet today. If you have any feedback or questions about these resources, feel free to get in touch with us at:

learning@sheffieldmuseums.org.uk



The Dam and Waterwheels

Abbeydale Works was the biggest water-powered industrial site on the River Sheaf in the 19th century. The river water held in this dam was very important as it provided the power for all of the Abbeydale site, and continues to power the four waterwheels today. The dam was also used for a variety of other activities, like fishing, bathing and ice-skating.

Help the children to put together the steps of the process of channelling this water power: the water from the river was held in the dam, then released to flow through the waterwheels which drove the machinery. The used water then goes in a tunnel under the ground back to the river. In this way, the water goes around in a cycle and is re-used, but never used up.

Possible questions to ask your students:

At the dam:

- If your group is starting the trail here, you could begin by asking the children what initial thoughts they have about Abbeydale: What do you think about this place? How does being here make you feel? What do you think people did here?
- Where does the water in this dam come from?
- Does anybody know what this river is called? (You can explain to the children how the city name 'Sheffield' comes from the River Sheaf.)
- What wildlife and plants live here? Would it be safe or dangerous to be an animal or a plant in/around the dam and the steelworks? Why?

At the waterwheels:

- How many waterwheels can you see? (There are four waterwheels of varying sizes)
- What sound do you think the waterwheels would make when they are running? Would it be noisy with all the water flowing?
- Do you think it's good or bad for the environment to use water as a source of energy? Should we take some inspiration from Abbeydale and think about using more water power in the modern world?
- Water is a renewable energy source. What other renewable energy sources can you think of?



Students may ask:

- Do the waterwheels still work/is the dam still used?

Yes! Although the water in the dam has been lowered after a problem with leaking, when the leak is repaired the dam will be refilled and the waterwheels will run again.

- Can you paddle/swim etc. in the dam?

Make sure the children understand that they definitely cannot do so now, but that in the 19th century people did swim in the dam and even skated on it when the water froze, as winters then were much colder than winters now.

The matter of the dam regularly freezing over in the 19th century could be used to bring up the topic of global warming and making children think about the impact of human industry on the environment.

Workers' Cottage

Three workers' cottages were built on the Abbeydale site in 1793.

Each cottage had an allotment garden outside in what is now the car park.

These cottages were 'tithed', meaning that to rent one you would have to be an important worker at the Abbeydale site. Many generations of one family lived in the cottages, with some sons following in their fathers' footsteps to also work at Abbeydale. This highlights how workers' skills often passed through the generations, but also the difficulty of social mobility in the Victorian era.

Invite the students to explore the cottage, asking them what makes it different from a modern house, and if they think they'd like to live here.

Possible questions to ask your students:

- What do you think is missing from this house? (Some possible answers could be an indoor toilet/bathroom, running water, electric lighting, heating, fridge/freezer)
- How would you feel living without electricity? (Cold and dark)
- Some of the families who lived here had up to 10 children. Do you think there's enough space for 10 children to live here? (emphasise the crowding and lack of resources, with children having to share beds and sleep on the landing)
- What could be some of the problems of overcrowding? (Possible answers could be as simple as children lacking personal space or space to play, more arguments between siblings and parents, or touch on deeper problems like infectious illnesses spreading quickly)
- What questions would you like to ask a child living in this house?

Students may ask:

- **How did the people living here stay warm?**

Point out the fireplaces downstairs and upstairs, the rugs and curtains used to provide insulation, and the multiple blankets on the bed, but stress that it would still feel very cold indoors in the winter! Some students may notice the warming pan on the bed. The pan would be filled with embers from the fire and put under the covers to warm the bed up. The long handle made it easier to move the pan around the bed and carry it without burning yourself.

- **How did people see at night with no lights in the house?**

The workers and their families would use portable light sources like candlesticks and oil lamps. Over in the Manager's House, the manager's wealthier family had the luxury of two oil lamps.



- **How did the people living here wash/get water?**

Water would have to be collected outside and brought into the house to be heated up and used. The toilet was outside and was shared between everyone living in the three cottages. The inhabitants of the cottage could use chamber pots at night to avoid having to go outside to the toilet in the cold.

- **What is the door under the stairs for?**

This door leads down into a pantry cellar, where food was stored in a dark and dry environment (In a time before fridges and freezers).

Grinding Hull

The grinding hull is where tools at Abbeydale were sharpened.

The site's water wheels powered grindstones inside that grinders would use to sharpen blades. Grinders would sit behind the spinning grindstones and move the blades on them to create a sharp edge. The access to the grinding hull itself is limited at the moment, but students are still able to look inside to see some of the machinery from that time. For further information see the interpretation board.

Possible questions to ask your students:

- What can you see and hear in this room? What do you think it would be like working there?
- Tools were sharpened here on grindstones by professional grinders. It was a very dangerous job and they had to work all day. What kind of skills would you need to work in the grinding hull?
- The blades that were sharpened here were mainly for use on farms. What kind of farmwork would need blades? (Cutting grass and crops at harvest time).

Bonus Question: How do you think this kind of job would be done differently today?

Answers could include: Automation, better technology, better safety equipment, bigger spaces/scale.

Students may ask:

- **Why can't we go into the grinding hull?**

The access is restricted because the machinery is quite dangerous.

- **How and why were the tools sharpened?**

The spinning grindstones were powered by the Dam's waterwheels and sometimes the steam engine on site, the grinders would run the blades along the spinning grindstones to make a sharp edge. The blades needed to be sharp for use on farms and the strong steel made at Abbeydale helped bring money and fame to the city's industry.



The Steam Engine, Boiler and Tilt Forge

General Notes: There is a lot to see between these three features. If possible with staff numbers, teachers may want to separate their students to look at different sections of the stop.

The Boiler, or the foundations of where the boiler once was: These foundations once housed a boiler to heat the hamlet. In 1870 the boiler exploded causing one death and several injuries. This speaks to the lack of regulation in places like this during the 19th century. For those in charge of sites like Abbeydale, the fines for accidents like this one were lower than the cost of introducing safety measures, so little was done to ensure the workers' safety.

Possible questions to ask students:

- What do you think a boiler of this size would do? (Provides steam for the engine in the next room, helps to power machinery and provide heat for the adjoining buildings).
- When the boiler exploded in 1870, it killed two men named John Beighton and James Palmer. Can you imagine the sound it would have made and the damage it would have caused?
- Can you think of any other places you might find a boiler?

The Steam Engine Room: This steam engine is the only one in Sheffield that is still in its original site and has been restored thanks to the work of historical engineers and restoration specialists. It was added to the site in the 1850s and helped to power the machinery at Abbeydale when there was not enough water in the dam to do so.

Possible question to ask students:

- Have you ever seen a steam engine before? Can you think of anything else that might have used steam engines for power? (Trains, Ships, Mines, Factories).
- In Victorian times, this is how a lot of technology was powered. How has that changed? How do we power our technology in modern times?
- Steam engines were a hugely important part of why Britain became a powerful country during the 19th Century? Why does better technology make you more powerful?

The Tilt Forge: It was in this room that scythes were made by welding steel between iron. When the site was actively making tools, this room would have been filled with the sound of the huge hammers powered by the waterwheels and the heat of molten metal.



Possible questions to ask students:

- What do you feel in a place like this? What can you see or smell, what draws your attention?
- Can you imagine what it would have been like when all the hammers were working? How is it different from today?
- Could you imagine working in a place like this? What would be good or bad about working here and why?

Students may ask:

- **About how the process worked:**

It was here that pieces of steel were heated up to over 1000°C between two pieces of iron, like a metal sandwich! Once they were heated up they were passed underneath the hammers and banged into shape. Then they would be taken to a different forge outside to be hand shaped.

- **Why it is colder in the tilt forge than outside:**

The materials used to make the forge like stone flooring make the building colder, but it would have been extremely hot back when the site was active.

Crucible Furnace, including the Potmakers Store and the Cellar

Here men worked in extreme heat with very little protection to forge the crucible steel. While it is hard to prove where exactly crucible steel was first developed, the unique 'recipe' used at sites like Abbeydale was part of the reason Sheffield became so synonymous with steel production. There is not much space in the building so again, if possible with staff numbers, teachers may want to split the children into groups to look at different sections.

Possible questions to ask students:

In the Charge Room:

- It was here that they made the steel for the tools and it would get very very hot, (up to 1600°C). What kind of clothes would you have to wear? (The workers only had leather and water-soaked sacking to protect themselves)
- This kind of work required a whole team of workers working together. Do you like to work in a team like that or do you prefer working alone? Why?
- Sheffield became famous for its steel thanks to places like Abbeydale. What other things is Sheffield famous for or what do you like about Sheffield? If you are not from Sheffield, what is your hometown famous for?
- Only men were allowed to do this work. Do you think that's fair? Would you like to work in this job? What would be good or bad about it?

In the Potmakers Store and Cellar:

- Young people not much older than yourselves would have to work in places like this? How does that make you feel? What would you ask a child from this time if you could?
- Pot makers would travel all over the country to do their work. Do you like to travel? Have you been to other countries or other parts of this country?
- At this time, most children had to work and they could not go to school. Would you rather go to school or work in a place like this? Why?

Bonus Question: Everywhere you have seen so far is kept in good condition by a team of historical engineers. Do you think it's important to preserve our past? Why or why not?



Students may ask:

- **Why do they put the metal in the holes?**

They are called melting holes. The team would lower the steel mixture in and close the lid to keep it hot enough. It could take up to four hours!

- **Why are the pots on the shelf destroyed?**

Those pots are the ones that have been used and been damaged by the process.



The Blacking Shop

The Blacking shop was where the last steps of the scythe-making process were carried out. Here the finished scythe blades would be painted with a special black varnish (hence the name: Blacking shop) to prevent rusting, then dried in front of the fire. When the blades were dry, they would be wrapped up in straw rope (as seen on the workbench) ready to be stored in the warehouses on the site and then shipped out across the country and abroad.

Remind the children that although it might be very quiet now, this was in fact a busy workshop full of employees using tools and making lots of noise. Although there is a lack of evidence for women working in Abbeydale's blacking shop, at some of the other works managed by the Tyzack family, who ran Abbeydale from 1849 to 1933, women often worked in the blacking shops.

Possible questions to ask your students:

- What would be good or bad about working here?
- What might be dangerous? (Highlight the sharp scythes, the furnace, the damage to the workbench from the tools, and the lack of protection for the workers' hands and eyes)
- What sort of noises do you think the tools would make? If the students have visited the other workshops, you could ask them: Do you think this workshop would be louder or quieter than the other workshops?
- Why was it important to polish and package up the finished scythes? (Protecting the blades, but also a business owner would want the scythes to look good and impress the people who bought them to create a good reputation for Abbeydale products)
- How would you sell the scythes if you were in charge at Abbeydale? What advertising could you use? What things could you say about the scythes to encourage people to buy them? (Children may reference modern advertising methods, but you could also challenge them to think of how they would promote the products with only 19th century resources available)
- Would you like to work in the Blacking shop, or would you prefer to work in another one of the buildings you've seen? Why?



Students may ask:

- **Where did the stairs lead to?**

The stairs went up to the warehouse where the packaged scythes were stored before being exported.

- **What was kept in the big container?**

Whale oil, used to lubricate the scythes. Whale oil was used generally as it is thin and non-corrosive and stays in liquid form even in freezing temperatures. At Abbeydale, whale oil was applied to hot scythes as it could bring the temperature of the metal down without affecting its high quality.



The Works Gallery

Here may be a good place to reflect on what you have seen so far with a bit more space for the students. You can learn more about the different jobs that were done at Abbeydale and talk about what the students think.

Possible questions to ask students:

- What does a place like this make you feel or think? How will you describe this museum to your family or friends?
- What has been your favourite part of the museum so far? Why is it interesting?
- How do you think the environment has been affected by this type of factory? Think about local animals like birds and fish.
- An important part of this type of place is that the tools made here were sold in lots of different places. Why is it important to have connections with other places?
- Do you think that life would have been hard for the workers here? Why?
- What kind of questions would you like to ask people from this time period if they were here today?
- Do you think places like Abbeydale are important? Why or why not?
- Do you think the people that worked here knew how dangerous it was at the time? In the future, what questions do you think people will have about the way we live?

Bonus Question: Steel was important all over the world. Can you think of any countries that might have been involved in either making or using steel? (Students will likely guess any countries they know).

Possible answers:

Russia, USA, France, Germany, Brazil, China, Australia, India, Sri Lanka, Sweden, Norway.



The Manager's House

This was the family home for the manager of Abbeydale Works, built in 1838. The coach house and the stables were added in 1840. Today it's furnished to show what home life was like for a lower-middle class family in the late 19th century.

One family who lived here were the **Tyzacks**. Three generations of this family ran Abbeydale for 85 years, beginning in 1849.

If your group is finishing here, you could ask the children, from what they've learned and can remember so far, what events, changes or difficulties the Tyzack family would have experienced during their tenure as managers.

Children can also be encouraged to compare the features of this house to those of the **Workers' Cottage** and make a judgment on where they'd rather live and why.

Possible questions to ask your students:

- What do you think is missing from this house compared to a modern house? (Some possible answers could be an indoor toilet/bathroom, running water, electric lighting, heating, fridge/freezer)
- How do you think people in this house might have kept warm without heating/got water/found light at night?
- Abbeydale has had lots of different people in charge over the years. Could you imagine managing this place? What things would you have to think about?
- At the coach house you can see the coach that the manager would travel around in. The coach was pulled by horses. What other modes of transport might have been used in the 19th century? (Children can be guided to consider the differences between the transport available in the past and the transport available in the present)
- At the stables, you could ask the children what other jobs they think horses may have done at Abbeydale? (As well as pulling the manager's coach, horses were used to pull carts of materials around the site and to other locations nearby)





Students may ask:

- **Why does the (master) bed have curtains around it?**

In the Victorian times bed hangings were common for families who could afford them. They allowed the manager and his wife to have some privacy from their children and from servants in a time when houses were generally smaller and families generally larger, and were also a status symbol.

- **When did Abbeydale close down? Why?**

Abbeydale Works ceased production in 1933, when the managers, Tyzack, Sons and Turner decided to concentrate all their manufacturing at another site on the River Sheaf, the Little London Works. Without the demand for the site's steel, Abbeydale lay dormant for several years. The hamlet was reopened for a short period during WW2 when its high quality crucible steel was made again to aid the war effort, and has been open as a museum since 1970.

