The Industrial Revolution Source Pack.
By Kate Peart
**Rationale:**

I know that most of the students in the class compiled a D.B.Q. set I really wanted to explore one of the other options that you had given us in class as my final project for History. So I decided to get together 20 sources about the industrial revolution (in Britain), compile them in a linked pdf as a sort of resource guide, for a history unit on the Industrial revolution unit. This would be like a resource pack that a teacher could use for their own information when building lessons or it could be used at the beginning or end of a unit. The beginning to look at with the students, give them some information and pictures and make use of the one hook activity. It would be a sort of whirlwind tour of the upcoming unit it would also allow for them to look at pictures of people from the time period and get a sense of how they feel about the contents of the picture. If it were used at the end of a unit it could be used as an enrichment for students who are finishing work early and might benefit from being able to look at the pictures, read the fictional excerpts from books that were set in that time thus keeping them on task without making them do more “work”, or it could be used to get the students to create a project(of a smaller scale) to pass in encompassing all the knowledge that they have gained from the unit.

This is by no means a lesson plan or a unit but I do hope that I ended up going in the right direction.
Section 2 Outline: Industrial Revolution

A study of the industrial revolution and the beginning of the age of technology

- the causes of industrialism (conditions that lead to the IR in Britain)
- the nature of industrialism (role of machines and factory system)
- the effects of industrialism (productivity, social change, urbanization, pollution)
- the continuing significance of technology (the ongoing revolution as represented by the computer, robotics, and awareness of the environment.

Key Questions:

- **What where the necessary conditions that set the stage for the industrial revolution in Britain?**
  o Students should understand the role and significance of the agrarian revolution, the role of capital and financial institutions, the significance of the commercial progress in Britain, the importance of free movement of labour, and the role of invention.

- **What do we mean by the term industrial revolution?**
  o Students should have an understanding of the nature of the machine and the factory system students should be able to compare the industrial system with the presiding domestic system or dotage industry. What is meant by the terms automation and computerization? It is often argued that the domestication of plants and animals completely transformed human society and laid the foundation for civilization. Can industrialism be seen as a similar transformation of society?

- **What where the social effects of industrialism?**
  o Students should have a picture of the early effects on the working class in the mines and factories. Students should study the living conditions of both the rich and the poor. How did urbanization affect the role of the family and the role of women in society? Students should be aware of the movement for reform and of the beneficial effects of productivity communication, transportation and health care.
- **What were the political effects of industrialism?**
  
  Students should be aware of the relationship between industrialism, liberalism and socialism. The development and application of the principals of "laissez-faire", the theories and practices of both utopian and Marxism socialism and the conservative reaction to industrialism should be studied.

- **What is the significance of industrialism?**
  
  As we live in an age that continues to be dominated by technology, students should be given and opportunity to study and discuss their own time and place. Such topics as automation, computers, robotics, weapons and war, the environment and pollution, finite resources, distribution of wealth and power, role of knowledge and access to knowledge could be discussed.

**Key concepts:**

- Industrialism
- Cottage industry
- The machine
- Factory system
- Capital
- Agrarian revolution
- Automation
- Computer
- Robotics
- Urbanization
- Liberalism
- Socialism
- Marxism
- Laissez-faire
- Environment
- Pollution
- Unionism

Bolded Areas include what I feel is covered within this document.
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### Simple Sailboat Craft


**Supplies:**

- A wide plastic lid (like the lid from a margarine tub)
- A drinking straw
- Construction paper
- Kids' scissors
- A hole punch
- Crayons, markers, and/or stickers
- A small wad of play dough

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<tr>
<th><strong>Cut a triangle from a piece of construction paper - this will be your sail.</strong></th>
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<td>Decorate the sail with crayons, markers, and/or stickers.</td>
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<th><strong>Punch three holes along one side of the triangle.</strong></th>
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<th><strong>Weave a drinking straw (the boat's mast) through the holes.</strong></th>
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<th><strong>Put a small wad of molding clay on the inside of the lid. Push the end of the drinking straw into the clay.</strong></th>
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<td><strong>You now have a cute little toy sailboat that can float in water!</strong></td>
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With this activity you can break students into two groups, give them a set time (10 to 15mins) to make as many of the crafts as they can, one team using a 1 person one job model and the other group having each person follow the process all the way through.
You could also have a groups of 10 students do this in front of the class, by grouping them into 5 students trying each method.

Before the activity
Have students make predictions on what side will make them more quickly
Have students make predictions about what side will produce better quality

This can be used to start a discussion about the means of manufacturing goods in factories. What having 1 person do one job repeatedly means for the ability to get work done more quickly.
Agricultural Revolution:
From: http://library.thinkquest.org/05aug/01419/arevolution.html

The agricultural revolution occurred in England from 1750 to 1900. Most farmers during this time changed the way they produced food.

The Enclosure Movement

England before the Industrial Revolution began an enclosure movement that revolutionized the landscape of rural England. Instead of communal exploitation of land, property would be managed privately. The community in a typical English farmer society was no longer in charge of land, and there was no longer a loose and lax policy on the occupation of land: open pastures and meadows were transformed into fenced, hedged, or walled borders. The name "enclosure" was derived from the fact that most land was now officially "enclosed" and no longer open.

The process of enclosure was most apparent in the 18th and 19th century, when numerous acts and bills were signed by the English parliament for separate and different parts of land. Eventually, enclosure became so popular that most of the country, except for a few remote areas in the Northwest, practiced enclosure. Enclosure, in revolutionizing pattern of landscape, revolutionized economic activity by isolating and organizing different farms.

People were actually charged to use different "segments" of land. The farmers of England were not happy with the system, but it helped boost England's economy, a necessary factor for the growth of any industry.

The Norfolk Crop Rotation

Before the agricultural revolution, farmers had strips of land that they grew their food on redundantly, draining a specific portion of land and all of its nutrients eventually. For the nutrients to return, farmers often left strips of land empty or fallow for up to five years.

A new system, however, was developed around the 19th century, known as the Norfolk Crop Rotation. Under this system, an area of land was split into different sections, and each section would always be planted, but the different plants per section would be rotated. Some years, plants that did not require many nutrients, while others didn't.

Because of the increase in population and the new system of forming numerous strips of land, much more planting had to be done. Since there was a limited number of farmers, machines had to be made. This situation led to the main enhancers of the Industrial Revolution, such as the seed drill.
At the dawn of the eighteenth century, farming was the primary livelihood in England, with at least 75% of the population making its living off the land. (Kreis) This meant that many English families had very little to do during the winter months except sit around and make careful use of the food and other supplies that they stored up during the rest of the year. If the harvest had been smaller than usual or if any other unexpected losses had come about, the winter could be a very long, cold, and hungry one. The cottage industry was developed to take advantage of the farmers' free time and use it to produce quality textiles for a reasonable price.

To begin the process, a cloth merchant from the city needed enough money to travel into the countryside and purchase a load of wool from a sheep farm. He would then distribute the raw materials among several farming households to be made into cloth (Cottage Industry). The preparation of the wool was a task in which the whole family took part. Women and girls first washed the wool to remove the dirt and natural oils and then dyed it as desired. They also carded the wool, which meant combing it between two pads of nails until the fibres were all pointed in the same direction. Next, the wool was spun into thread using a spinning wheel and wound onto a bobbin (this was often the job of an unmarried daughter; hence, the word "spinster" is still used today to describe an unmarried woman). The actual weaving of the thread into cloth was done using a loom operated by hand and foot; it was physically demanding work, and was therefore the man's job (The Textile Industry). The task of transforming raw wool into cloth could be done entirely by one household, or split between two or more (ie. spinning in one home, weaving in another). The merchant would return at regular intervals over the season to pick up the finished cloth, which he then brought back to the city to sell or export, and to drop of a new load of wool to be processed.

The cottage industry proved to be profitable for the urban merchants, since they could sell the finished cloth for far more than they paid the farmers to make it. The cottage industry helped to prepare the country for the Industrial Revolution by boosting the English economy through the increase of trade that occurred as the country became well-known overseas for its high-quality and low-cost exports. Previously, tradesmen had done all the manufacturing themselves, so the idea of subcontracting was new and appealing. The cottage industry was also a good source of auxiliary funds for the rural people. However, many farming families came to depend on the enterprise; thus, when industrialization and the Agricultural Revolution reduced the need for farm workers, many were forced to leave their homes and move to the city.
The Industrial Revolution created an enormous increase in the production of many kinds of goods. Some of this increase in production resulted from the introduction of power-driven machinery and the development of factory organization. Before the revolution, manufacturing was done by hand or simple machines. Most people worked at home in rural areas. A few worked in shops in towns as part of associations called guilds. The Industrial Revolution eventually took manufacturing out of the home and workshop. Power-driven machines replaced handwork, and factories developed as the best way of bringing together the machines and the workers to operate them.

One of the most spectacular features of the Industrial Revolution was the introduction of power-driven machinery in the textile industries of England and Scotland. This took place between 1750 and 1800 and marked the beginning of the age of the modern factory.

Before the industrialization of the textile industry, merchants purchased raw materials and distributed them among workers who lived in cottages on farms or in villages. Some of these workers spun the plant and animal fibers into yarn, and others wove the yarn into cloth. This system was called domestic or cottage industry.

The first spinning machines were crude devices that often broke the fragile threads. In 1738, Lewis Paul, a Middlesex inventor, and John Wyatt, a Lichfield mechanic, patented an improved roller-spinning machine. This machine pulled the strands of material through sets of wooden rollers that moved at different speeds, making some strands tighter than others. When combined, these strands were stronger than strands of uniform tightness. The combined strands passed onto the flier, the part of the machine that twisted the strands into yarn. The finished yarn was wound onto a bobbin that revolved on a spindle. Mechanically, the roller-spinning machine was not completely successful. However, it was the first step in the industrialization of textile manufacturing.

In the 1760's, two new machines revolutionized the textile industry. One was the spinning jenny, invented by James Hargreaves, a Blackburn weaver and carpenter. The other machine was the water frame, or throstle, invented by Sir Richard Arkwright, a former Preston barber. Both machines solved many of the problems of roller spinning, especially in the production of yarn used to make coarse cloth.

Between 1774 and 1779, a Lancashire weaver named Samuel Crompton
developed the spinning mule. This machine combined features of the spinning jenny and the water frame and, in time, replaced both machines. The mule was particularly efficient in spinning fine yarn for high-quality cloth, which, before the invention of the mule, had been imported from India. During the 1780's and 1790's, larger spinning mules were built. They had metal rollers and several hundred spindles. These machines ended the home spinning industry. For further information on the development of spinning machines.

The first textile mills appeared in Great Britain in the 1740's. By the 1780's, England had 120 mills, and several had been built in Scotland.

Weaving machines. Until the early 1800's, almost all weaving was done on handlooms because no one could solve the problems of mechanical weaving. In 1733, John Kay, a Lancashire clockmaker, invented the flying shuttle. This machine made all the movements for weaving, but it often went out of control.

In the mid-1780's, an Anglican clergyman named Edmund Cartwright developed a steam-powered loom. In 1803, John Horrocks, a Lancashire machine manufacturer, built an all-metal loom. Other British machine makers made further improvements in the steam-powered loom during the early 1800's. By 1835, Great Britain had more than 120,000 power looms. Most of them were used to weave cotton. After the mid-1800's, handlooms were used only to make fancy-patterned cloth, which still could not be made on power looms.


As the number of factories grew people from the countryside began to move into the towns looking for better paid work. The wages of a farm worker were very low and there were less jobs working on farms because of the invention and use of new machines such as threshers. Also thousands of new workers were needed to work machines in mills and foundries and the factory owners built houses for them. Cities filled to overflowing and London was particularly bad. At the start of the 19th Century about 1/5 of Britain’s population lived there, but by 1851 half the population of the country had set up home in London. London, like most cities, was not prepared for this great increase in people. People crowded into already crowded houses. Rooms were rented to whole families or perhaps several families. If there was no rooms to rent, people stayed in lodging houses.
The Industrial Revolution radically changed the organization of work. In the new factories, a large number of workers gathered together six or seven days a week to engage in tightly coordinated tasks paced by machinery. This new organization of work implied a sharp distinction between work and home. In earlier types of work, such as farming, trades, and cottage industries, work and home were not necessarily separate spheres and child labor was not a public issue.

Factory work greatly affected the life experiences of children, men, and women. For children, factory work served as a form of hard schooling. It channeled into adult factory jobs child workers who obeyed orders, worked diligently, and survived the health hazards and tedium. While the Industrial Revolution eventually put great pressure on men to engage in paid work outside the home continuously from adulthood to retirement, some men, particularly older men, refused to work in the factories and preferred to engage in spot labor and work around the home. Some women made large contributions to their families through paid labor in the factories. It was not unusual for married women with children to work full-time in early English factories. As a substitute for family members engaging in non-paid home labor, some families made arrangements for paid child care, as well as paid laundry services and cleaning and cooking services.

Outside of the factories, adult women had poor labor market opportunities, and within the factories, adult women earned much less than adult men. These differences may have been economically related. They provided an incentive for men to engage in paid labor outside the home, and women to do non-paid labor within the home.
An Example of a Factory Layout:
Child labor in Factories
From: 

Wages and Hours:
Children as young as six years old during the industrial revolution worked hard hours for little or no pay. Children sometimes worked up to 19 hours a day, with a one-hour total break. This was a little bit on the extreme, but it was not common for children who worked in factories to work 12-14 hours with the same minimal breaks. Not only were these children subject to long hours, but also, they were in horrible conditions. Large, heavy, and dangerous equipment was very common for children to be using or working near. Many accidents occurred injuring or killing children on the job. Not until the Factory Act of 1833 did things improve. Children were paid only a fraction of what an adult would get, and sometimes factory owners would get away with paying them nothing. Orphans were the ones subject to this slave-like labor. The factory owners justified their absence of payroll by saying that they gave the orphans food, shelter, and clothing, all of which were far below par. The children who did get paid were paid very little. One boy explained this payment system:

"They [boys of eight years] used to get 3d [d is the abbreviation for pence] or 4d a day. Now a man's wages is divided into eight eighths; at eleven, two eighths; at thirteen, three eighths; at fifteen, four eighths; at twenty, a man's wages is about 15s [shillings]."
Street Children

Hordes of dirty, ragged children roamed the streets with no regular money and no home to go to. The children of the streets were often orphans with no-one to care for them. They stole or picked pockets to buy food and slept in outhouses or doorways. Charles Dickens wrote about these children in his book "Oliver Twist".

Some street children did jobs to earn money. They could work as crossing-sweepers, sweeping a way through the mud and horse dung of the main paths to make way for ladies and gentlemen. Others sold lace, flowers, matches or muffins etc out in the streets.

From:
http://www.historywiz.com/images/industrialrevolution/streetchildren-small.gif

Video Link:
http://www.teachertube.com/view_video.php?viewkey=89b8995b9bc6f8779f4e
# Rich Children Vs Poor Children

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<th>Rich Children</th>
<th>Poor Children</th>
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<td>Parents of rich children often were bankers, merchants, industrials or civil servants. They lived in beautiful suburbs, sometimes in private hotels. The upper class organized parties and could go to festivals whereas the poor worked.</td>
<td>Children had an unhappy childhood. They worked hard to satisfy the needs of their parents because families were very poor and they didn't have enough money, so children worked. They underwent very difficult conditions of employment. Days were long for them: eight or twelve hours a day, six days a week.</td>
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<td>Only children from rich families went to school. But these ones were not many.</td>
<td>Children worked in manufactories.</td>
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<td>Boys were in famous schools like Eton where education was very strict. Eton is a big school near London in front of Windsor.</td>
<td>At that time, there was no insurance and when children had accidents or were ill they didn't have any help.</td>
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<td>They could go to school invented by Thomas ARNOLD, a rugbyman, where behaviour, friendship, fair play were more important than others. Thomas ARNOLD and parents thought it was more important for gentlemen to learn classical authors than sciences.</td>
<td>Many children often worked with adults: they worked under the same conditions. Children were small, they could go into narrow spaces, children were clever too and employers appreciated these qualities.</td>
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<tr>
<td>Girls didn't have the same education as boys. They learned to become good wives and good mothers.</td>
<td>In 2001, in poor countries, many children often work to help their parents but the conditions of employment may be better than the industrial revolution in England.</td>
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<td>This education was very unfair so in 1870, the Education Act was passed. It offered schools for all children between the age of 5 and 13.</td>
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Housing:

Living Conditions during the Industrial Revolution varied from the splendor of the homes of the owners to the squalor of the lives of the workers. On this page you will see some examples of housing for both.

As enclosure and technical developments in farming had reduced the need for people to work on farmland, many people moved to the cities to get accommodation and a job. These cities were not prepared for such an influx in such a short period of time and cities such as Birmingham, Liverpool, Manchester etc. (all vital to the Industrial Revolution) suffered problems not witnessed anywhere else in the world at this time.

These cities needed cheap homes as the Industrial Revolution continued to grow. There were few building regulations then and those that did exist were frequently ignored. Builders had a freehand to build as they wished. Profit became the main motivator for builders. They knew that those coming to the cities needed a job and somewhere to live. Therefore, a house was put up quickly and cheaply – and as many were built as was possible. The Industrial Revolution saw the start of what were known as back-to-back terrace housing. These had no garden and the only part of the building not connected to another house would be the front (and only) entrance (unless you were lucky enough to live in the end of the terrace). In Nottingham, out of a total of 11,000 homes in the 1840’s, 7,000 were back-to-back.
The building material used was the cheapest a builder could find. Cheap slate from Wales was commonly used. The finished homes were damp as none were built with damp courses and those who could only afford cellar dwellings lived in the worst possible conditions as damp and moisture would seep to the lowest part of the house.

None of these homes was built with a bathroom, toilet or running water. You either washed in a tin bath in the home with the water being collected from a local pump or you simply did not wash. Many didn’t wash as it was simply easier.

There would be a courtyard between each row of terraces. Waste of all sorts from the homes was thrown into the courtyard and so-called night-men would collect this at night and dispose of it. Sanitation and hygiene barely existed and throughout the eighteenth and nineteenth centuries the great fear was a cholera, typhus or typhoid epidemic.

From: http://www.historylearningsite.co.uk/towns.htm

From: http://www.makingthemodernworld.org.uk/stories/the_industrial_town/06.ST.02/img/IM.1065_zl.jpg
Workhouses:

From:
http://www.schoolshistory.org.uk/IndustrialRevolution/workhouse.htm

The Workhouse was a building made to house the poor. They were built all over the country as a result of the 1834 New Poor Law's introduction. This act of Parliament said that people who were very poor, old, sick or unemployed should be looked after in a Workhouse. These buildings were often very large and grew to be feared by the poor and old.

The workhouse would provide food, drink and work for it's inmates. There were often strict rules and the people running the establishments were often cruel.

External information link: http://www.workhouses.org.uk/
Excellent resource for students to look through for pictures and explanations of workhouses.
Transport changed very quickly in the period 1700-1900 as a result of an increased need for better methods of moving goods, new technologies and large scale investment in the countries infra-structure (communications network).

The changes came in several stages. First Roads were improved, then Canals were built and finally the Railway was developed. Each change had an impact upon life in the country, each shortened travel times over longer distances and each enabled industrialists to seek new markets in previously out of reach areas of the country. Likewise they enabled more raw materials and goods to be shipped to and from factories, providing further impetus to the industrial age.

Railways developed quickly following the early successes of the Stephenson's and other pioneers. This new technology was the result of the invention and subsequent development of the steam engine. Steam could be used to power motors and had been used in mines to help bring coal and tin to the surface quicker. This idea was transferred to the notion of pulling wagons along rails and eventually Stephenson took the idea one stage further and built the steam engine into a wagon.

This first 'train' was very slow and initially scared a lot of people but soon the early railway lines between Liverpool and Manchester and Stockton and Darlington were accepted and people began to realise that Rail had a lot to offer industry and society in general.

The railways spread across the country at an amazing rate as companies were established to build and run the new lines. Many were financed by industry, eager to have quicker delivery of goods and a wider sales reach.

The impact of the railways was great. Industry benefited as goods could now be transported faster and in even greater quantities than before, reducing costs and creating bigger markets. The construction of the railway network also fueled demand for coal and steel. Ordinary people saw the benefits too. They could now get around the country much quicker and for the first time holidays out of the city were a possibility (Thomas Cook organising the first 'package' holiday from Leicester Station to the seaside). Communications in general improved as well. Newspapers could now be sent from London and Manchester, where most of the national dailies are printed, to towns across the country, the postage system became much quicker and movement of workers became a more realistic prospect.
One of the most noticeable consequences of the growth of the Railways was the rapid development of a number of towns. Crewe and Peterborough are both examples of towns that grew quickly due to their location on the railway network.
Unions:
From: http://www.yale.edu/ynhti/curriculum/units/1981/2/81.02.06.x.html

If the conditions in which people lived in these factory towns were considered bad, then the conditions in which they worked can be appropriately characterized as being horrendous. Inside these factories one would find poorly ventilated, noisy, dirty, damp and poorly lighted working areas. These factories were unhealthy and dangerous places in which to work. Normally, workers put in twelve to fourteen hours daily. Factory Acts that were later enacted by Parliament regulated the number of hours that men, women and children worked.

The factory system changed the manner in which work was performed. Unlike the domestic system the work was away from home, in large, impersonal settings. Workers were viewed by their employers merely as “hands.”

Slowly, workers began to realize the strength they could possess if they were a unified force. It was a long, uphill battle for workers to be able to have the right to organize into officially recognized unions. Their lot was one of having no political influence in a land where the government followed a laissez-faire policy.

This hands off policy changed as the pressure from growing trade unions increased. A movement was beginning to free workers from the injustices of the factory system. Political leaders called for reform legislation which would address these injustices.
Works of Fiction Based around the Industrial Revolution:

Oliver Twist Excerpt:
For a long time after it was ushered into this world of sorrow and trouble, by the parish surgeon, it remained a matter of considerable doubt whether the child would survive to bear any name at all; in which case it is somewhat more than probable that these memoirs would never have appeared; or, if they had, that being comprised within a couple of pages, they would have possessed the inestimable merit of being the most concise and faithful specimen of biography, extant in the literature of any age or country.
As Oliver gave this first proof of the free and proper action of his lungs, the patchwork coverlet which was carelessly flung over the iron bedstead, rustled; the pale face of a young woman was raised feebly from the pillow; and a faint voice imperfectly articulated the words, 'Let me see the child, and die.'

The surgeon had been sitting with his face turned towards the fire: giving the palms of his hands a warm and a rub alternately. As the young woman spoke, he rose, and advancing to the bed's head, said, with more kindness than might have been expected of him:

'Oh, you must not talk about dying yet.'

'Lor bless her dear heart, no!' interposed the nurse, hastily depositing in her pocket a green glass bottle, the contents of which she had been tasting in a corner with evident satisfaction.

'Lor bless her dear heart, when she has lived as long as I have, sir, and had thirteen children of her own, and all on 'em dead except two, and them in the wurkus with me, she'll know better than to take on in that way, bless her dear heart! Think what it is to be a mother, there's a dear young lamb do.'

Apparently this consolatory perspective of a mother's prospects failed in producing its due effect. The patient shook her head, and stretched out her hand towards the child.

The surgeon deposited it in her arms. She imprinted her cold white lips passionately on its forehead; passed her hands over her face; gazed wildly round; shuddered; fell back—and died. They chafed her breast, hands, and temples; but the blood had stopped forever. They talked of hope and comfort. They had been strangers too long.

'It's all over, Mrs. Thingummy!' said the surgeon at last.

'Ah, poor dear, so it is!' said the nurse, picking up the cork of the green bottle, which had fallen out on the pillow, as she stooped to take up the child. 'Poor dear!'

'You needn't mind sending up to me, if the child cries, nurse,' said the surgeon, putting on his gloves with great deliberation.

'It's very likely it WILL be troublesome. Give it a little gruel if it is.' He put on his hat, and, pausing by the bed-side on his way to the door, added, 'She was a good-looking girl, too; where did she come from?'

'She was brought here last night,' replied the old woman, 'by the overseer's order. She was found lying in the street. She had walked some distance, for her
shoes were worn to pieces; but where she came from, or where she was going to, nobody knows.'

The surgeon leaned over the body, and raised the left hand. 'The old story,' he said, shaking his head: 'no wedding-ring, I see. Ah! Good-night!'

The medical gentleman walked away to dinner; and the nurse, having once more applied herself to the green bottle, sat down on a low chair before the fire, and proceeded to dress the infant.

What an excellent example of the power of dress, young Oliver Twist was! Wrapped in the blanket which had hitherto formed his only covering, he might have been the child of a nobleman or a beggar; it would have been hard for the haughtiest stranger to have assigned him his proper station in society. But now that he was enveloped in the old calico robes which had grown yellow in the same service, he was badged and ticketed, and fell into his place at once—a parish child—the orphan of a workhouse—the humble, half-starved drudge—to be cuffed and buffeted through the world—despised by all, and pitied by none.

Oliver cried lustily. If he could have known that he was an orphan, left to the tender mercies of church-wardens and overseers, perhaps he would have cried the louder.
THOMAS GRADGRIND, sir. A man of realities. A man of facts and calculations. A man who proceeds upon the principle that two and two are four, and nothing over, and who is not to be talked into allowing for anything over. Thomas Gradgrind, sir -- peremptorily Thomas -- Thomas Gradgrind. With a rule and a pair of scales, and the multiplication table always in his pocket, sir, ready to weigh and measure any parcel of human nature, and tell you exactly what it comes to. It is a mere question of figures, a case of simple arithmetic. You might hope to get some other nonsensical belief into the head of George Gradgrind, or Augustus Gradgrind, or John Gradgrind, or Joseph Gradgrind (all supposititious, non-existent persons), but into the head of Thomas Gradgrind -- no, sir!

In such terms Mr. Gradgrind always mentally introduced himself, whether to his private circle of acquaintance, or to the public in general. In such terms, no doubt, substituting the words "boys and girls" for "sir". Thomas Gradgrind now presented Thomas Gradgrind to the little pitchers before him, who were to be filled so full of facts.

Indeed, as he eagerly sparkled at them from the cellarage before mentioned, he seemed a kind of cannon loaded to the muzzle with facts, and prepared to blow them clean out of the regions of childhood at one discharge. He seemed a galvanizing apparatus, too, charged with a grim mechanical substitute for the tender young imaginations that were to be stormed away.

"Girl number twenty," said Mr. Gradgrind, squarely pointing with his square forefinger, "I don't know that girl. Who is that girl?"

"Sissy Jupe, sir," explained number twenty, blushing, standing up, and curtseying.

"Sissy is not a name," said Mr. Gradgrind. "Don't call yourself Sissy. Call yourself Cecelia."

"It's father as calls me Sissy, sir," returned the girl in a trembling voice, and with another curtsey.

"Then he has no business to do it, " said Mr. Gradgrind. "Tell him he mustn't. Cecelia Jupe. Let me see. What is your father?"

"He belongs to the horseriding, if you please, sir."

Mr. Gradgrind frowned, and waved off the objectionable calling with his hand.
"We don't want to know anything about that, here. You mustn't tell us about that, here. Your father breaks horses, don't he?"

"If you please, sir, when they can get any to break, they do break horses in the ring, sir."

"You mustn't tell us about the ring here. Very well, then. Describe your father as a horsebreaker. He doctors sick horses, I dare say?"

"Oh, yes, sir."

"Very well, then. He is a veterinary surgeon, a farrier, and a horsebreaker. Give me your definition of a horse."

(Sissy Jupe thrown into the greatest alarm by this demand.)

"Girl number twenty unable to define a horse!" said Mr. Gradgrind for the general behoof of all the little pitchers. "Girl number twenty possessed of no facts in reference to one of the commonest of animals! Some boy's definition of a horse. Bitzer, yours."

The square finger moving here and there, lighted suddenly on Bitzer, perhaps because he had chanced to sit in the ray of sunlight which, darting in at one of the bare windows of the intensely whitewashed room, irradiated Sissy. For, the boys and girls sat on the face of an inclined plane in two compact bodies, divided up the centre by a narrow interval; and Sissy, being at the corner of a row on the sunny side, came in for the beginning of the sunbeam, of which Bitzer, being at the corner of a row on the other side, a few rows in advance, caught the end. But, whereas the girl was so dark-eyed and dark-haired that she seemed to receive a deeper and more lustrous colour from the sun, when it shone upon her, the boy was so light-eyed and light-haired that the self-same rays appeared to draw out of him what little colour that he ever possessed. His cold eyes would hardly have been eyes, but for the short ends of lashes which, by bringing them into immediate contrast with something paler than themselves, expressed their form. His short-cropped hair might have been a mere continuation of the sandy freckles on his forehead and face. His skin was so unwholesomely deficient in the natural tinge, that he looked as though, if he were cut, he would bleed white.

"Bitzer," said Mr. Gradgrind. "Your definition of a horse."

"Quadruped. Graminivorous. Forty teeth, namely twenty-four grinders, four eye-teeth, and twelve incisive. Sheds coat in the spring; in marshy countries, sheds hoofs, too. Hoofs hard, but requiring to be shod with iron. Age known by marks in the mouth." Thus (and much more) Bitzer.

"Now, girl number twenty," said Mr. Gradgrind, "You know what a horse is"
She curtseyed again, and would have blushed deeper than she had blushed all this time. Bitzer, after rapidly blinking at Thomas Gradgrind with both eyes at once, and so catching the light upon his quivering ends of lashes that they looked like the antennae of busy insects, put his knuckles to his freckled forehead, and sat down again.
Barton had been roused by his daughter's entrance, both from his stupor and from his uncontrollable sorrow. He could think on what was to be done, could plan for the funeral, could calculate the necessity of soon returning to his work, as the extravagance of the past night would leave them short of money, if he long remained away from the mill. He was in a club, so that money was provided for the burial. These things settled in his own mind, he recalled the doctor's words, and bitterly thought of the shock his poor wife had so recently had, in the mysterious disappearance of her cherished sister. His feelings towards Esther almost amounted to curses. It was she who had brought on all this sorrow. Her giddiness, her lightness of conduct, had wrought this woe. His previous thoughts about her had been tinged with wonder and pity, but now he hardened his heart against her for ever.

One of the good influences over John Barton's life had departed that night. One of the ties which bound him down to the gentle humanities of earth was loosened, and henceforward the neighbours all remarked he was a changed man. His gloom and his sternness became habitual instead of occasional. He was more obstinate. But never to Mary. Between the father and the daughter there existed in full force that mysterious bond which unites those who have been loved by one who is now dead and gone. While he was harsh and silent to others, he humoured Mary with tender love; she had more of her own way than is common in any rank with girls of her age. Part of this was the necessity of the case; for, of course, all the money went through her hands, and the household arrangements were guided by her will and pleasure. But part was her father's indulgence, for he left her, with full trust in her unusual sense and spirit, to choose her own associates, and her own times for seeing them.

With all this, Mary had not her father's confidence in the matters which now began to occupy him, heart and soul; she was aware that he had joined clubs, and become an active member of a trades' union, but it was hardly likely that a girl of Mary's age (even when two or three years had elapsed since her mother's death) should care much for the differences between the employers and the employed, - an eternal subject for agitation in the manufacturing districts, which, however it may be lulled for a time, is sure to break forth again with fresh violence at any depression of trade, showing that in its apparent quiet, the ashes had still smouldered in the breasts of a few.

Among these few was John Barton. At all times it is a bewildering thing to the poor weaver to see his employer removing from house to house, each one grander than the last, till he ends in building one more magnificent than all, or withdraws his money from the concern, or sells his mill, to buy an estate in the country, while all the time the weaver, who thinks he and his fellows are the real makers of this wealth, is struggling on for bread for his children, through the
vicissitudes of lowered wages, short hours, fewer hands employed, etc. And when he knows trade is bad, and could understand (at least partially) that there are not buyers enough in the market to purchase the goods already made, and consequently that there is no demand for more; when he would bear and endure much without complaining, could he also see that his employers were bearing their share; he is, I say, bewildered and (to use his own word) "aggravated" to see that all goes on just as usual with the mill-owners.