CHOLERA: LONDON’S SOLUTION TO A MEDICAL MYSTERY

TEACHER’S NOTES
Thanks to a £47,100 grant from Heritage Lottery Fund (HLF) and a £15,500 grant from Thames Water, Westminster Archives have been able to develop this education pack to highlight the central role Westminster played in providing a solution to a 19th-century medical mystery.

In 1854 cholera, a horrifying, and deadly disease with little respect for class or wealth, ravaged the squalid streets of Soho and rocked the great centre of the British Empire. Dr John Snow, a recluse doctor had the genius to look beyond the consensus that a miasma or bad smell was the source of the disease. His unlikely partnership with a Soho vicar, the Reverend Henry Whitehead helped him find the evidence to prove that cholera was spread through drinking contaminated water. This engaging story is a central part of this education pack and our website www.choleraandthethames.co.uk. The latter includes a computer game, created by students at Westminster University, which provides an ideal introduction to Snow’s story, which can be developed further using the primary source material in the first section of this pack. Further in depth work can be undertaken using the drama scenes we have included that break the story of cholera in London into bite size pieces.

Despite all of the evidence that Dr John Snow presented to the medical establishment, it was only when the ‘Great Stink’ of 1858 drove M.P.s out of Parliament that a real attempt was made to find a solution. The great engineer given this enormous task was Sir Joseph Bazalgette. His grand sewage system proved to be London’s solution to cholera as after it was completed the disease never returned to the capital. The creation of Bazalgette’s sewage system beneath the Thames Embankment and the outfall stations at Crossness are covered within this pack. We are grateful to Simon McKeon and Lucy Bonner, archivists at Bexley Local Studies and Archives for the provision of material relating to Crossness so that we can tell a much fuller story of Bazalgette’s impact on London as a whole.

Westminster Archives stands in the middle of what Charles Booth once classified as an area inhabited by: ’semi vicious criminals,’ and whose squalor led Charles Dickens to name it the Devil's Acre in the first edition of his magazine ‘Household Words.’ Dickens serialised his novels in this magazine so that he could draw an audience to the articles he included which campaigned for action on social issues. This has influenced the main section of this pack as it is based around working to produce an updated version of Household Words. It encourages children to make use of the animated cartoons on our choleraandthethames.co.uk website to inspire a range of creative writing tasks.

Peter Daniel
Westminster Archives, May 2012
“WATER! WATER! EVERYWHERE; AND NOT A DROP TO DRINK.”
Look carefully at Source 1: ‘A Court for King Cholera’ and use the numbered points listed below to label the cartoon:

1) The poor spelling of ‘lodging house’
2) The coffin being carried
3) The infant lying in the filth
4) The bare-footed children
5) The boy holding a rat by its tail
6) The crazy kid doing a head stand in the dung heap
7) The props holding the ramshackle buildings up
8) A chimney sweep

What is missing from the picture that shows it was drawn before anyone knew what the cause of cholera was?

The ‘A Court for King Cholera’ picture doesn’t show a water pump which might seem strange to us now as we know that cholera is a waterborne disease. However, this cartoon was published four years before Dr John Snow’s investigations in Broad Street. When it was published in 1852, in Punch magazine, it was meant to be critical of the failure of towns to implement the 1848 Public Health Acts. The failure to show a water pump is evidence of the strong belief that cholera was linked to foul air or a miasma. This explains the scenes that cartoonist John Leech chose to include. If you have access to You Tube you can watch a short explanatory film: http://www.youtube.com/watch?v=pASSZRVPDW0
Using the clues on Source 2 can you describe what services William Woodward was offering on his business card?

William Woodward’s main occupation is as a nightman (sometimes known as night soil man). He was employed to remove human excrement from privies and cesspits. In Tudor times the nightman was known as a gong farmer. They were only allowed to work at night and the waste they collected had to be taken outside the city boundaries. Woodward also offers his services as a Carman, who would make local deliveries and collect goods and parcels. Effectively a modern day van driver. As a chimney sweep he would use apprentice boys from the workhouse or bought them from their parents and train them to climb chimneys. Boys as young as four climbed hot flues that could be as narrow as 9 inches square. Work was dangerous and they could get jammed in the flue, suffocate or burn to death.
Using Primary Sources
Bexley, Kent Cholera Morbus
20th October 1831 Poster

The Bexley poster was issued three weeks before the first outbreak of cholera in Britain in Sunderland on the 12th November 1831. The disease had reached Hamburg in Germany and panic spread throughout Britain.

Londoners were advised to have these items available should someone in their home contract cholera.

Use google and find the meaning of:
- Camphor
- Sal Volatile
- Cajeput

How effective do you think these remedies would be? (Explain your answer)

- **Camphor** is a waxy, white or transparent solid with a strong, aromatic odour and is found in wood of the camphor laurel.
- **Sal Volatile** or ammonium carbonate is more commonly known as smelling salts.
- **Cajeput** is a pungent oil made from the leaves of the myrtaceous tree found in Malaya and Australia.

None of these remedies would have been effective in saving the life of a cholera victim. They all work effectively as smelling salts, briefly rousing a patient but not helping to tackle the key cause of death of cholera victims-dehydration.
Using Primary Sources
St James Vestry Posters 1853

Would any of the suggestions on the poster in Source 4 have helped to prevent the outbreak of cholera in Broad Street 9 months later? (Explain your answer)

One of the suggestions on Source 4 mentions drinking beer. The brewery workers in Broad Street survived the cholera epidemic in 1854 because they always drank beer at work and never water from any of the local water pumps.

Looking at sources 5 and 6, were people in Soho prepared to listen to advice?

Source 5 shows how cholera created panic amongst those living in the St James Vestry area. It was the fear of the unknown that led parishioners to pray to God for a solution. The St James Vestry had resorted to spreading disinfectant around the streets of Soho in a vain attempt to contain the cholera outbreak. The Times article from 1854 shows just how much this annoyed the local residents.

‘We prefer to take our chance with the cholera than be bullied into health. There is nothing a man hates so much as being cleansed against his will or having his floors swept, his hall whitewashed, his dung heaps cleared away and his thatch forced to give way to slate.’

The Times 1854
Using Primary Sources
Board of Works for the Strand
1st August, 1866 Poster

Source 7

Why has advice changed in 1866 from what was advised in 1853?
By 1866 Dr John Snow’s theory that cholera was a water-borne disease had been accepted by the medical establishment.

Which of the 6 precautions listed here would have been the most effective against cholera?
Boiling drinking water would have been the most effective action suggested on this poster as it would kill the cholera germs.

Which of the precautions listed would have been least effective against cholera?
The avoidance of stale fruit or vegetables or tainted meat and fish would not have prevented someone from contracting cholera.
Using Primary Sources
The Morning Chronicle
August 23rd 1854

Source 8

“It is on the banks of the polluted Thames, in the lower parts of the London basin that the people die in large numbers.”
The Morning Chronicle

<table>
<thead>
<tr>
<th>DISTRICTS AND SUB-DISTRICTS</th>
<th>Elevation above Trinity high-water mark, population in 1851, and the number of deaths from Cholera registered:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>above high-water mark</td>
</tr>
<tr>
<td>----------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>London</td>
<td>28</td>
</tr>
<tr>
<td>West Districts</td>
<td>39</td>
</tr>
<tr>
<td>North Districts</td>
<td>135</td>
</tr>
<tr>
<td>Central Districts</td>
<td>49</td>
</tr>
<tr>
<td>East Districts</td>
<td>26</td>
</tr>
<tr>
<td>South Districts</td>
<td>6</td>
</tr>
</tbody>
</table>

Using Source 8 which area of London had the highest number of deaths in August 1854?

In the six weeks before August 19th, 1854 the South Districts had 61% of the recorded deaths from cholera: 817 + 370 = 1,187 deaths. This was from a total of cholera deaths in London of 1,207 + 729 = 1,936.

Why do you think that the Morning Chronicle believed that more people were dying in low lying areas than those on higher ground?

The Morning Chronicle newspaper article from which this table came was trying to find a statistical link between the areas where most people were dying from cholera and how far they were situated above the high tide level of the Thames. They put forward the hypothesis that the large number of deaths in the South Districts of London was due to them being low lying and thus more liable to be affected by the rotten smells emanating from the Thames. They were trying to fit the evidence to back their belief in the miasma theory of disease. However the reason these districts had such a high death rate was that the water companies that supplied these areas were drawing their drinking water directly from the polluted Thames.
## Mount Street Workhouse Cholera Cases Reported August 1849

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>If admitted into Workhouse when</th>
<th>Died</th>
<th>Cured</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A man unknown</td>
<td>50</td>
<td>About 12 o’clock 27 June, 1849</td>
<td>8am June 28th</td>
<td></td>
<td>Believed to be Irish brought from Hyde Park</td>
</tr>
<tr>
<td>Michael Sullivan</td>
<td>40</td>
<td>11am 3 July, 1849</td>
<td>8pm July 3</td>
<td></td>
<td>Irish brought from South Molton Street</td>
</tr>
<tr>
<td>Ann Mard</td>
<td>47</td>
<td>11am 17th July, 1849</td>
<td>7.30am July 18</td>
<td></td>
<td>Nurse assistant in cholera ward</td>
</tr>
<tr>
<td>Ann Butt</td>
<td>35</td>
<td>11am 25th July, 1849</td>
<td>13th August, ‘49</td>
<td></td>
<td>Living at 14 Gregory Street</td>
</tr>
<tr>
<td>George Cavey</td>
<td>31</td>
<td>11.30am 6th July, 1849</td>
<td>6th August ‘49</td>
<td></td>
<td>From Hyde Park and slept in a bed for 14 nights</td>
</tr>
<tr>
<td>Mary Kelly</td>
<td>13</td>
<td>5pm 25 July, 1849</td>
<td>12th August, ‘49</td>
<td></td>
<td>Irish Tramp</td>
</tr>
<tr>
<td>Elizabeth March</td>
<td>11</td>
<td>8.30pm 25th July, 1849</td>
<td>13th August ‘49</td>
<td></td>
<td>Mother &amp; Daughter from Erin Place both in a filthy state covered in vermin.</td>
</tr>
<tr>
<td>Elizabeth March</td>
<td>43</td>
<td>8.30pm 25th July, 1849</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Where did three of the cholera cases at Mount Street originally come from?

There are three people listed from Ireland. A man unknown, Michael Sullivan and Mary Kelly.

### Hospitals wouldn’t take cholera cases. Why does Ann Mard’s death explain this?

Hospitals including the Middlesex Hospital in Marylebone refused to admit cholera cases. Most hospitals had rules at this time saying that they would not take patients who were too ill. The workhouse was the last resort for many. Ann Mound was a nurse in the Mount Street workhouse and obviously contracted the disease from one of her patients. For the sake of staff and patients hospitals could not admit cholera victims.
This activity offers students the opportunity to model the strategy used by John Snow to identify the water pump which caused the cholera epidemic to spread. Although this activity doesn’t use real cases, Snow’s original map is used to add a bit of historical authenticity.

Depending upon the level of the class, you might wish to further analyse the plotted data. You can explore why the disease spread outward from the water pump and examine factors resulting in the spread of infection. For example, have students suggest reasons why some grid squares had no incident of disease, while neighbouring squares do.

As you can see, this activity offers an authentic overlap of science skills with mathematical skills involving the plotting, analysis and communication of data. It also offers a valid experience for exploring STEM (Science Technology Engineering and Mathematics) connections.

Dr John Snow (left) and The Reverend Henry Whitehead (right) helped to solve the mystery of the cholera outbreak in Soho. Can you follow in their footsteps?
## Dr John Snow and the Broad Street Pump

**John Snow’s Map of Soho**

### Location of disease victims

<table>
<thead>
<tr>
<th>B-6</th>
<th>E-4</th>
<th>F-2</th>
<th>F-2</th>
<th>E-3</th>
<th>G-3</th>
<th>E-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-1</td>
<td>D-3</td>
<td>E-3</td>
<td>E-1</td>
<td>F-1</td>
<td>D-4</td>
<td>E-2</td>
</tr>
<tr>
<td>G-4</td>
<td>E-1</td>
<td>G-3</td>
<td>D-1</td>
<td>D-3</td>
<td>E-3</td>
<td>F-3</td>
</tr>
<tr>
<td>C-3</td>
<td>F-1</td>
<td>E-4</td>
<td>E-2</td>
<td>C-1</td>
<td>G-1</td>
<td>E-1</td>
</tr>
<tr>
<td>E-2</td>
<td>G-4</td>
<td>B-1</td>
<td>F-3</td>
<td>F-2</td>
<td>E-2</td>
<td>D-2</td>
</tr>
<tr>
<td>G-1</td>
<td>C-2</td>
<td>A-5</td>
<td>D-2</td>
<td>E-2</td>
<td>F-2</td>
<td>F-3</td>
</tr>
<tr>
<td>D-5</td>
<td>G-1</td>
<td>E-2</td>
<td>D-6</td>
<td>F-5</td>
<td>F-1</td>
<td>F-2</td>
</tr>
<tr>
<td>A-3</td>
<td>F-2</td>
<td>D-1</td>
<td>D-1</td>
<td>G-1</td>
<td>D-3</td>
<td>E-1</td>
</tr>
</tbody>
</table>
1. Is there an advantage to adding a grid pattern to a map? Explain.

Yes. The grid makes it easy to locate a specific part of the map.

2. Which grid box lies in the centre of the map?

D-4

3. Were the cases spread evenly across the map, or were they clustered in a specific region? If so, which part of the map had the most cases?

They were clustered around the top right part of the map.

4. What might clustering of cases in one area suggest?

The area with the highest number of cases might be where the water-related disease is spread from.

5. Which box or boxes had the highest number of disease cases?

E-2 and F-2. They both had six cases of the disease.

6. Based upon your results, in which part of this map would you concentrate on looking for a source of the water-related disease?

E-2 and F-2, since these were the locations where you had the greatest number of infections.

7. Look closely at the map. Can you see any additional clues that would help identify the exact location from where a water-related disease could be spread? Explain.

Yes. In grid box E-2, a "pump" is identified. This might be a water pump, from which the infection was passed onto those who drank water from this source.

If you want to find out more about the story of Dr John Snow why don’t you visit www.choleraandthethames.co.uk. On the home page you will find a computer game which gets you to take on the role of Dr John Snow and takes you back to Broad Street, Soho in 1854 to investigate the cholera outbreak.
1) Cholera in the Devil’s Acre

Narrative Story
Many of Charles Dickens’s novels were serialised in Household Words to attract readers to his magazine that campaigned on social issues. In its first edition in 1850 Dickens commissioned an article on the Devil’s Acre area of Westminster.

- Visit the Cholera in London website: www.cholerainlondon.org and watch the animation: ‘The Tale of Old Father Thames.’ Its storyline is based on Dickens’s ‘A Christmas Carol,’ which was first published in 1843 and introduced one of Dickens’s best known characters, Ebenezer Scrooge.
- You have been asked to write a chapter of “The Tale of Old Father Thames” for publication in Household Words that will be called Cholera in the Devil’s Acre. It covers the part of the film when Justin Ebenezer is taken back to the Devil’s Acre by the Ghost of Old Father Thames.

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**Look at the sources on page 26** Use the pictures to help you set the scene for your story.

- Big Ben Strikes 1am. Describe the sound of the chimes and the deserted Lord North Street looking towards the church of St John’s Smith Square.
- Describe Justin’s bedroom and the sudden appearance of the Ghost of Old Father Thames.

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**Look at the sources on pages 27 and 28** Use the pictures to help you develop your story as Old Father Thames takes you back to Old Pye Street during the cholera outbreak of 1854.

- You find yourself standing in Old Pye Street. How has the area changed from today?
- Is there anything about the area that has remained the same?
- Read the London Daily News article and then describe the home of a Devil’s Acre cholera victim.

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**Look at the sources on pages 29 and 30** Use the pictures to help you develop your story as Old Father Thames shows you why the Devil’s Acre was so notorious for crime.

- You walk along Old Pye Street towards Strutton Ground. How has the area changed from today?
- What does the dog Billy fight in the Duck Lane pit which shows how diseased the Devil’s Acre is?
- Describe what you see when entering the ‘School of Fobology’ at the Wun Tun pub.

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**Look at the sources on pages 31, 32 and 33** Overcrowding was a big factor in the Cholera outbreak of 1854. Use the maps and illustration to discover what the main cause of the terrible overcrowding was.

- Compare the maps on pages 32 and 33. What do you notice is different?
- Look at the Booth map. How did Charles Booth categorise the people who lived in St Ann’s Street?
- Look at page 33 and the quotes from ‘Ragged London.’ Describe why the building of Victoria Street made the cholera outbreak of 1854 so much worse for the people of the Devil’s Acre.

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**Look at the sources on page 34** Use the pictures to help you finish your chapter of the story. Old Father Thames takes you forward from 1854 to 1883.

- You are shown a worker’s train arriving at Victoria Station and the Abbey Orchard estate (pictures 1 and 2). What happened to the poor slum dwellers of the Devil’s Acre?
- Can you explain why Bazlagette’s Embankment helped prevent further outbreaks of cholera.
- Old Father Thames leaves you. Describe waking up again in your room in Lord North Street.
**Cholera in the Devil’s Acre**

Lord North Street is a short street of Georgian terraced housing running between Smith Square and Great Peter Street in Westminster, the political heartland of British government. As such they have always commanded high fees and featured in many dramatic storylines. The street is named after the 2nd Earl of Guilford, who was known for most of his life under his courtesy title Lord North, and was Prime Minister from 1770-1782.

The main feature that differs from the Gustav Dore image of Old Pye Street is the emergence of the Abbey Orchard Estate dominates Old Pye Street. It was built by the Peabody Trust in 1882 to eradicate slum housing.

The London Daily News article clearly underlines the filthy conditions that existed in the Devil’s Acre and which contributed to the outbreaks of cholera. It mentions five victims in one morning, many of which were still lying where they died.

If you were walking along Old Pye Street towards Strutton Ground you would pass St Matthew’s Street. This is now quite unremarkable with warehousing along one side of the street facing flats of the Peabody Estate’s Gibbs Buildings. However in the mid nineteenth century this was the meeting place of the local criminal fraternity, the infamous Westminster Pit. The press report from The Times mentions that the fighting dog Billy had destroyed a hundred rats. The areas proximity to the river and the decaying rubbish heaps that abounded in all of the lodging houses meant that the Devil’s Acre was infested with rats. The Wun Tun pub was the place where stolen goods were fenced. These were passed through a hole in the wall of the pub in exchange for money. A Fagin like character ran the ‘School of Fobology’ teaching starving street orphans to be pick pockets.

The Greenwood map on page 33 shows the Devil’s Acre as it was before the building of Victoria Street, which was built to remove some of the slums.

Charles Booth’s poverty map shows general poverty in the Devil’s Acre but categorizes St Ann’s Street, site now of Westminster Archives, as an area of ‘semi vicious criminals.’

The building of Victoria Street drove the poor from the homes demolished into an ever smaller area. This increased overcrowding contributed to the deaths that occurred in the Cholera outbreak of

After the arrival of cheap workman’s trains into Victoria many of the poor were able to move away to find better housing in the suburbs. Those that George Peabody classified as the ‘respectable poor’ those with a profession such as a carpenter or plumber found homes in the new Peabody flats. Once Bazalgette had completed the Embankment the area was no longer a marshy area unsuitable for building. Better homes, such as the Peabody estates were built with access to clean drinking water. Sewage was no longer cast into the Thames which improved the quality of drinking water for those that remained in the area.
This section allows teachers to work through the story of cholera chronologically. It is designed around a class of 30 working in groups of 5 to 6 children. The newspaper templates attached allows children to confirm their understanding of their part of the cholera story by writing it up as a newspaper article. This can then be uploaded onto the Cholera and the Thames website.
Cholera: A London Drama

Before undertaking the drama sessions show the children the 20 minute Cholera and the Thames animation by visiting the project website www.choleranandthethames.co.uk.

Focus: Freeze frame drama and newspaper writing

Freeze Frame Drama - The play consists of 7 scenes, you can either work on all 7 scenes or choose which scenes to work on.

• Split class into groups of 5 and give each group a scene (2 mins). If you have an adult to work with each group they can take the role of narrator.
• Each group should read through their scene setting and character list (3 mins)
• Encourage each group to answer key questions about the text and images to identify what the story is about and who the key characters are (5 mins)
• Decide who will play each character and the part of the narrator whose role it will be to set the scene and introduce each character (2 mins)
• Read the character again, but this time ask your pupils to read the scene in character (3 mins)
• Prepare and practice a freeze frame of the scene (15 mins)
• Each group performs their freeze frame to the rest of the class, this should be done in scene order (4 mins per group)

Newspaper writing - Stories can be written individually or as a group

• Photocopy play scripts for each pupil.
• Study the play script template and discuss breaking each story into the 5ws: Who; What; Where; When and Why. Get the children to do this on the template for their scene.
• Use the diagrams to explain the difference between writing the scenes up as an ordinary story and writing them as a piece of journalism. Explain that the 5ws they have identified can be used to form the opening paragraph of their story.
• Ask them to select two characters from the story who had most influence on its outcome. Use the template for them to jot down their thoughts about these characters.
• Ask the children to give their opinion about the story—is there a lesson to be learnt from their scene?
• Give the children the internet research sheet and ask them to do further research on their story. Tell them to log the websites of where they found any interesting information.
• Ask the children to use the Household Words template to write up their final draft.

Telling a Story

- Beginning
- Middle
- End

The Five Fs of Journalism

- The Five Fs
- Further Details
- Opinion
- Future
- End
A Letter to the Editor of Household Words
A Letter to the Editor

Imagine you are Captain Gillett, an Erith bargeman. Write a letter arguing for something to be done about the sewage being dumped in the Thames. Use sources 1-4 for evidence

Dear Editor

Look at Source 1 (1st para) Explain why you are worried about cholera coming to Erith

My name is Captain Gillett and I think that...
By 1885, the date of this newspaper article in the Morning Post, the cause of cholera was well known. The people of Erith were therefore very worried about the impact of raw sewage being pumped directly into the Thames close to where they lived.

Look at Source 1 (2nd para) Describe why the Metropolitan Board of Works solution is wrong

The Metropolitan Board of Works will argue ...

The Metropolitan Board of Works tried to add disinfectant to the sewage that it pumped raw into the Thames at Crossness but Captain Gillett’s description shows that this was having no effect.

Look at Source 2 Describe your (Captain Gillett) own experiences of the condition of the Thames at Erith

I can say from my own experience...

Captain Gillett’s description of the Thames at Erith is quite graphic. Children should pick one or two examples that he has given to help make his argument.

Look at Source 3 Highlight how the area has become rat infested because of the sewage outfall

An example of how bad things have become...

The Erith Times is worried about the infestation of rats at Crossness and the impact this might have on disease in Erith. It reported that a heron had been found near to the sewage outflow pipe with a large rat in its stomach.

Look at Source 4 make the case for the use of the ABC system to improve conditions at Erith

The solution to the problem is as simple as ABC...

In 1882 a Royal Commission recommended chemical treatment of the sewage. A company was formed called the Natural Guano Company and they used the ABC process at Crossness. This mixed some of the solids with alum, blood, charcoal and clay to create fertilizer. This was used on land near Crossness to help grow potatoes. From 1887, the liquid effluent was separated from the solid sludge. Only the former was discharged into the river. The sludge was removed by special boats for disposal at sea. From 1887 to 1998, a fleet of sludge boats made regular journeys from Beckton and Crossness to Barrow Deep beyond the mouth of the Thames. Between 1915 and 1967, the nearby Black Deep site was also used for dumping sludge.

Yours sincerely
A Letter to the Editor

Imagine you are a modern day member of Erith Yacht Club and are worried about pollution in the Thames. Write a letter in favour of the Thames Tunnel using the information on p 56-57

Dear Editor

1 Describe the limits of Bazalgette’s Victorian sewage system in the 21st century
   I think that...
   London’s population has grown from around 2.5million in Bazalgette’s day to around 8 million people today. Although he provided capacity for some population growth his system can no longer cope with the size of London as a city today.

2 Highlight the health hazard for members of Erith Yacht Club
   The reason I say this is because...
   Rowing and sailing are very popular at Erith today. However when there is a large downpour of rain on London the Bazalgette sewers cannot cope and raw sewage is discharged into the river. This leaves high levels of deadly bacteria in the Thames for up to two days after each discharge making river users at Erith susceptible to the potentially harmful microbes that flourish in the polluted water.

3 What are the key Two Problems that have to be overcome
   The two key problems we have are
   The two problems are overloaded sewage works and sewers.

4 What are the Three Solutions to the problems of pollution in the Thames
   The three solutions that can help to deal with the problems we face are
   The three solutions involve investment in the sewage treatment facilities and the building of two new intercepting sewers: The Lee Tunnel and the Thames Tunnel.

5 What arguments have been put forward in Consultation against building the Thames Tunnel
   Some people will argue that
   Some local authorities are worried about the impact such major infrastructure works such as the building of the Thames Tunnel will have on riverside communities.

6) What Support from Environmental Groups has there been for the building of the Thames Tunnel
   However, many environmental groups believe
   Most of the Thames based environmental groups are in favour of the Thames Tunnel as they have witnessed first hand the impact of sewage contamination on wildlife.

Yours sincerely
The Sludge Boats
Writing a Summary
For Household Words
After the 5 Ws the final article below comes in at exactly 250 words

The LCC's fleet of boats carried sludge from the sewage treatment plants at Beckton and Crossness for dumping at Barrow Deep and Black Deep, beyond the mouth of the Thames. John worked one week off and one week on as the boats had to work continuously for 24 hours. He remembers how despite their cargo the boats were kept immaculately clean.

John's last day coincided with Queen Elizabeth II's coronation, which he recalls watching on a brand new television. John's father, Bill, worked on the Woolwich Ferry as a steam engineer. Shortly before he retired he took a job working on the engines at Crossness.

John remembers in those early days how barges would have a grey tide mark around them showing how dirty the water was and was told that if he ever went into the water he would have to go to hospital to have his stomachs pumped. Fortunately, this only happened to him once, shortly before he retired. By then, the quality of Thames water had improved so much that fishermen were a common site on the riverbank and the Port of London Authority, who John was working for, were using a special boat called 'The Thames Bubbler' to pump oxygen into the water.

JOHN DANIEL

The sludge boat, Henry Ward, where the 15 year old John Daniel found his first job on leaving school
Designing an Advertising Campaign for WaterAid
THE WATER THAT NAYAK DRINKS

Here is an example to show children how they can design their own Water Aid posters.

Your verse

This is the Water that Bivision drinks

Your verse

These are the coins that we hope to think

Your verse

Will help Water Aid clean up the rivers and sinks,
By buying new pumps
That’ll supply the water that Bivision drinks.

Our Target

1 £180 could pay for a composting (ecosan) latrine.

2 £800 could pay for a school sanitation block for 200 children.

3 £300 could pay for a hand pump.

4 £400 could pay for a tap stand