

3 The Biography of Robert Boyle: Who was Robert Boyle?

FOR TEACHERS

Lesson Title: *The Biography of Robert Boyle: Who was Robert Boyle?*

Area of Learning: Chronology; evidence

Aims: to build up a basic picture of the biography of Robert Boyle; pupils should be able to research, extract and chronologically sort written information about Boyle's life, from standard/easily accessible biographical secondary sources; pupils should be able to select, organise and deploy relevant information to produce structured work.

Vocab: biography, autobiography; primary, secondary, documentary, visual sources; utility, aristocratic, credibility, chronology, evidence, infer, extract.

Time frame: suitable for a one hour lesson plus homework

Resources: Boyle website - <http://www.bbk.ac.uk/Boyle/index.htm>; printed pupil worksheets containing images of primary sources (available below).

Pupil Tasks: Sources have been chosen to illustrate various aspects of Boyle's life and work. The image of his Dorset mansion shows his privileged social standing which to some extent had a bearing on his credibility; other sources describe his physical features, his character, experimental methods, education, intelligence and wealth.

Teachers should first ask pupils to complete task one. Research could be carried out in an ICT centre using the link to the Boyle timeline (http://www.bbk.ac.uk/Boyle/boyle_learn/boyle_timeline.htm); or, the file could be printed out by the teacher beforehand and distributed to pupils in written form which they would then work with in lessons. The 'extension task' could be set for homework and pupils could work as a group to complete it. Differentiation could occur by pupils producing simple or detailed chronologies; some pupils may wish to draw pictures illustrating Boyle's achievements set out along a very simple timeline.

Teachers should work through all the source material using a question and answer session; they should ensure that a discussion of the difference between primary and secondary sources occurs. The discussions will aid pupils to complete the table on sources.

Pupils will then be in a position to try to construct a short biography of Robert Boyle (task 2). When asked to produce the biography, pupils will almost certainly need some kind of writing frame to help them produce structured work.

It is possible that, in a one hour lesson, pupils will be able to construct the chronology of task 1 and complete the table for task 2. The writing of the biography could be set as homework.

FOR PUPILS

PUPIL WORKSHEETS

Task (1): Construct a chronology (timeline) of Boyle's life

How to do task (1). Draw a horizontal line across a piece of A4 paper (landscape view). Label the left hand edge 1627 and the right hand one 1692. The title should be written at the top: *A Chronology of Robert Boyle's Life*. Use the file located at http://www.bbk.ac.uk/Boyle/boyle_learn/boyle_timeline.htm to find out the principle events in Robert Boyle's life. Record some of them on your timeline, using labels. You may wish to include the following: Boyle's time living with his sister in London; Boyle's tour of Europe; Boyle's birth and death; Boyle's school education; Boyle's first use of the air pump; Boyle's time in Oxford; Boyle's membership of the Royal Society.

Further work: if you have time you may wish to extend your timeline of Boyle's life (stick A4 paper onto the beginning or end of the original) and add dates relating to other important scientific figures and historical events in English and European history such as Isaac Newton, Copernicus, Galileo, William Harvey, Francis Bacon, Robert Hooke, Descartes, the English civil war, the Commonwealth, the reigns of James, Charles I and Charles II, William III and Mary II, Queen Anne. To find out information on these key events and figures, use an encyclopaedia from your school or the internet.

Task (2) Write your own biography of Boyle's life.

How to do task (2) Look at all the sources on the worksheets concerning the life of Robert Boyle. Answer the questions on the sources. Then, use the material in your chronology and your answers to the questions to write a short biography of Boyle (story of Boyle's life). Your work will be entitled *A Biography of Robert Boyle*. You may wish to begin with a general statement about how important Boyle was and what he looked like. Then describe the main events in his life in chronological order (in the order in which they happened – your chronology/timeline will help you). Write about Boyle's education, his interests and how he spent his time.

Try to write several paragraphs, indenting the beginning of each one and including at least 3- 5 sentences in each paragraph. You may include illustrations if you wish. Refer to the sources using the phrases 'source * shows us/tells us that ...' / 'from source * we can learn that ...'. Your teacher will help you decide how to structure your work. It may help if you use sub-headings for each section of your work.

Selection of primary sources concerning the life of Robert Boyle

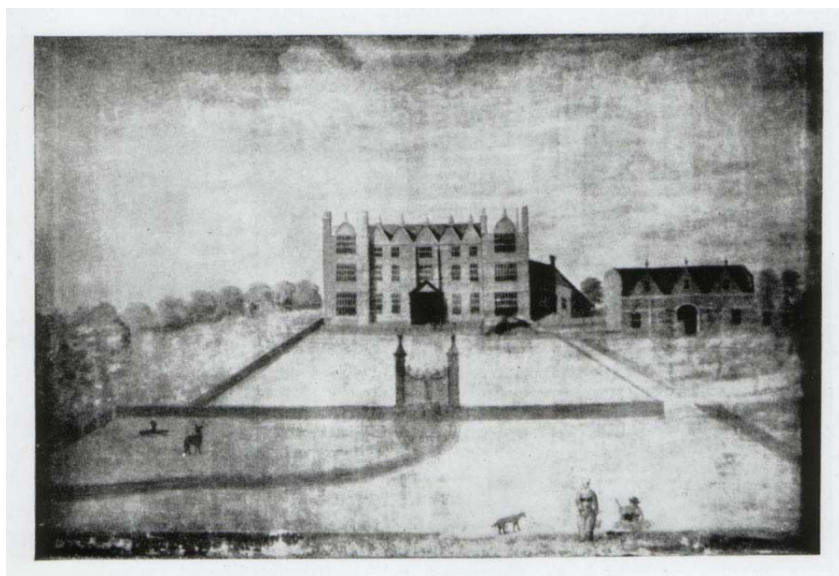
Source One: Extract on Robert Boyle from John Aubrey's *Brief Lives* (c. 1680), describing his character and wealth. (John Aubrey, *Brief Lives*, ed. J. Buchanan-Brown (London, 2000), p. 53).

Mr Robert Hooke said that Boyle received a private income of £3000 per annum. Boyle's father left him the manor of Stalbridge in county Dorset - a great freestone house (see source three). Mr Boyle is very tall (about six foot high) and straight, very temperate, and virtuous, and frugal. He is a bachelor; keeps a coach; stays with his sister, the lady Ranulagh. His greatest delight is chemistry. He has at his sister's a noble laboratory, and several servants (apprentices to him) to look to it. He is charitable to clever scientists who need money. He has also paid much money to foreign chemists in order to have them tell him their scientific secrets. At his own cost he got the New Testament translated into Arabic and sent the publication of this into the Muslim countries. He has high renown in England and abroad; and when foreigners come to visit England, they always make him a visit.

Source Two: extract from John Evelyn's letter to William Wotton, 1696, describing Boyle's lifestyle. (From M.Hunter, *Robert Boyle by Himself and his Friends* (London, 1994), p. 88).

The mornings after his devotions he constantly spent in philosophic [scientific] studies and his laboratory, sometimes extending them to night... indeed, his very bed-chamber was so extremely crowded with boxes, glasses, pots, chemical and mathematical instruments, books and bundles of papers, that there was but just room for a few chairs

Source Three: picture of Boyle's mansion, Stalbridge in Dorset. The house no longer exists. This painting of the Boyles' mansion was photographed in 1957.



Source Four: Extract from Bishop Gilbert Burnet's funeral sermon on Robert Boyle, 1692.
(From M.Hunter, *Robert Boyle by Himself and his Friends* (London, 1994), p. 47-8).

'He began early to show a ... capacity for learning and attended Eton school (**source seven**) ... his piety increased ... He decided to study the Scriptures in their original languages in his youth and became a great expert on them ... he read Greek and ... Hebrew ... but eventually the weakness of his sight stopped him from reading ... Boyle was ... a very devout worshipper of God ...

Sources 5a and 5b Extract from the *Diary of Robert Hooke*, 23 January 1678. Robert Hooke (1635-1703) who came from the Isle of Wight and went to Oxford for his education, worked as Boyle's assistant in the late 1650s at the time when Boyle carried out his pneumatic experiments. Subsequently he became Curator of Experiments to the newly-founded Royal Society and published *Micrographia* (1665) and other books. He wrote a diary during his life.

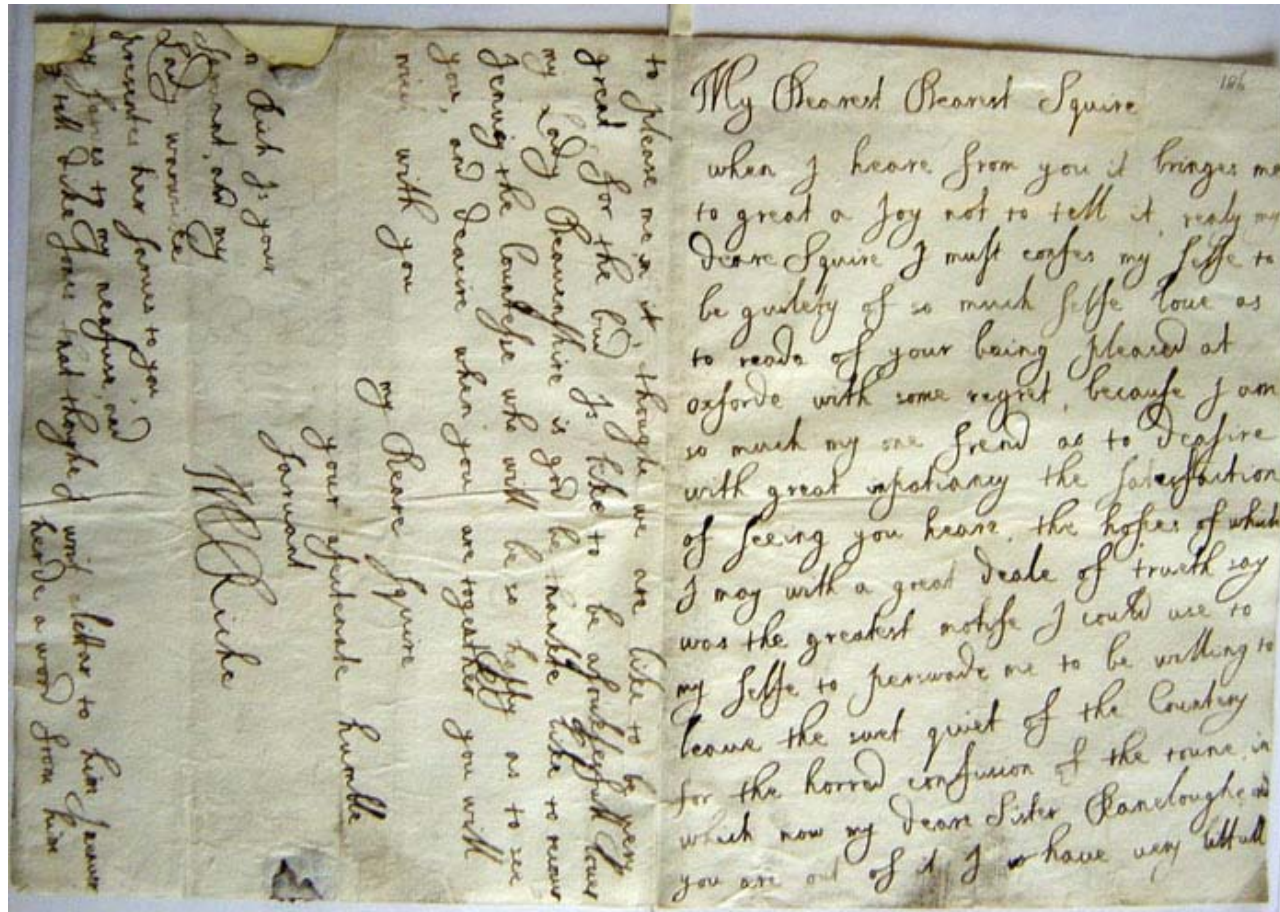
5a Extract from Hooke's diary. (H.W.Robinson and W.Adams, eds., *The Diary of Robert Hooke* (London, 1935), p. 341. '23 January 1678. I went to Mr Boyles in Pall Mall. I spoke with him and his sister, Lady Ranalaugh (with whom he lived) about bookes.' *Diary of Robert Hooke*, 23 January 1678

5b What Hooke's diary looked like. A page of Robert Hooke's diary, now preserved in the Guildhall Library, London. This page contains entries for November and December 1677. (Guildhall MS 1758 © Guildhall Library).



Source Six: a photograph of a letter of 1656 from Robert Boyle's sister, Mary Rich, Countess of Warwick (*Correspondence of Boyle*, vol. 1, pp. 205-6). The text mentions that Boyle was living in Oxford. It gives a sense of Boyle's close relationship with his older sisters. This letter survives among the Boyle Letters at the Royal Society. (Boyle Letters 5, fols. 185-6 © The Royal Society).

Source 6a: Picture of Mary Rich, Countess of Warwick. This engraved portrait of Boyle's sister by the famous Czech engraver, Vaclav Hollar, dates from 1652.



Source Seven: modern photo of Eton College



Source Eight: Robert Boyle as a boy; photograph of sculpture of Boyle from his mother's tomb in St Patrick's Cathedral, Dublin, erected by Boyle's father in 1632.



Source Nine: A contemporary engraved portrait of Boyle by William Faithorne.



Source Ten: A posthumous bust of Robert Boyle by the Italian sculptor, G. B. Guelfi, dating from c. 1730.



Questions for Pupils Based on Primary Sources Relating to the Life of Robert Boyle

1. What is a primary source? Why are primary sources so important to all historians?
2. What primary sources would tell another person about your life? (hint: photos, receipts for clothes, personal diary, video of your holidays, clothes in your wardrobe, reports about what you do from other people etc)
3. What is a secondary source?
4. How is a primary source different from a secondary source?
5. How many different types of primary sources, shown above, tell historians about the life of Robert Boyle?
6. Discuss these Boyle primary sources with your teacher. Consider what kinds of things each one tells the historian about Boyle's life. After you have done this, construct a table like the one below and fill it in.

Source	What it tells historians about Boyle's character, science, friends, experimentation, equipment etc
1	
2	
etc	
10	

7. After having completed questions 1-6, complete task (2) on the other sheet ('Write your own Biography of Boyle's life').