This is a piece of drama. It is 1816 and Edward Jenner is being interviewed in front of a public audience who want to find out more about his life and work.

Interviewer 1: Today we are welcoming Edward Jenner, who has had great success in the fight against smallpox. Welcome Edward!

Jenner: It is a pleasure to be here.

Interviewer 2: You come from Gloucestershire don’t you? Tell me about your early life, before you became a household name.

Jenner: Yes, I was born in Berkeley, Gloucestershire on 17 May 1749. My father was the vicar, but he died when I was quite young so I was brought up by my sister and her husband, who became the next vicar of the parish. I loved living in the countryside, and I took great pleasure in collecting birds’ eggs and looking for fossils. I went to school in Cirencester, and during this time I was inoculated for smallpox, an experience I’ve never forgotten.

Interviewer 1: What sort of medical training do you need to be a doctor these days?

Jenner: At the age of 14 I was apprenticed for seven years to Mr Daniel Ludlow, a surgeon of Chipping Sodbury, where I gained most of the experience needed to become a surgeon myself. In 1770 I moved to St. George’s Hospital in London, to complete my medical training, under the great surgeon and experimentalist John Hunter. Hunter recognised my abilities at dissection and investigation, as well as my understanding of plant and animal anatomy, and we are still firm friends to this day.

Interviewer 2: So, after all this training what did you do next?

Jenner: Well, in 1772 at the age of 23 I returned to Berkeley and established myself as the GP and surgeon. Although I later established medical practices in London and Cheltenham, Berkeley is where I consider home.

Interviewer 2: You said earlier you were inoculated against smallpox as child. How was that done?

Jenner: The practice at that time had been developed by the Chinese and brought over from Turkey by Lady Mary Wortley Montagu in 1721. What happened was that matter from a smallpox scab was rubbed into an open cut in the skin. This gave people a mild dose of the disease and protected them from the full force of the severe attack in the future. However, as I know from personal experience, it can be horrific. When I was inoculated at school I was ‘prepared’ by being starved, purged and bled. I was then locked up in a stable with other artificially infected boys until the disease had run its course. The method was not completely safe either: some people died from the mild dose they were given; others became carriers of the disease and could spread it.

Interviewer 2: It sounds dreadful. I’m glad that this doesn’t happen anymore! You have developed a new technique which, I’ve been told, works much better and is much less traumatic. How did you make your breakthrough?

Jenner: Well, in the village where I work, I found that many local people refused inoculation. I was worried about them, but I discovered from local farmers that people believed that they would not catch smallpox if they’d already had a mild disease called cowpox. I decided to undertake my own research. I made careful case notes to ensure I recorded all details correctly.

Interviewer 1: I’ve heard dairymaids came into this somehow. How was that?
Jenner
First, I examined some dairymaids and found that they indeed were less likely to contract smallpox. But my real breakthrough came when I decided to deliberately infect a boy, for the purpose of inoculation, with the cowpox. I chose my gardener’s son, James, who was about eight years old at the time. I took matter from a sore on the hand of a dairymaid who was infected by her master’s cows, and it was inserted, on 14 May 1796, into James’ arm by means of two superficial incisions. In order to ascertain whether James, after being so slightly infected with the cowpox virus, was secure from the smallpox, I then inoculated him on 1 July with matter taken directly from a smallpox pustule (not a scab). No disease followed. Several months afterwards, I tested him again, but again he did not suffer from the smallpox.

Interviewer 1: Lucky for you! What did you do next?
Jenner: After experimenting and observing 23 cases I finally was able to conclude that the cowpox protects the human constitution from the infection of the smallpox. I then submitted my case notes to the Royal Society in 1798.

Interviewer 1: What was the reaction?
Jenner: Well, they rejected my ideas! However, I do understand their reluctance. My ideas were so new that it was understandable that they were treated with scepticism.

Interviewer 2: Oh dear! So what did you do?
Jenner: I decided to publish them myself: An Inquiry into the Causes and Effects of the Variolae Vaccinae; a Disease Discovered in some of the Western Counties of England, Particularly Gloucestershire, and Known by the Name of The Cow Pox.

Interviewer 1: Snappy title!
Jenner: I called my technique ‘vaccination’, from the Latin vacca (which means ‘cow!’).

Interviewer 2: So, did it catch on, Edward?
Jenner: Well, not quite as I expected. This was partly for practical reasons: cowpox did not occur all that widely, so doctors who wanted to test the new process had to obtain cowpox matter from me personally. Another problem was that cowpox samples occasionally got contaminated with smallpox itself, because those handling it worked in smallpox hospitals. This led to claims that vaccination was no safer than smallpox inoculation. My new technique also angered many surgeons whose large incomes depended on the old inoculation technique.

Interviewer 2: But is it common now. I heard that people as far away as America were using your methods. A little bird told me that you had even had a letter from the President! What did he say?
Jenner: Yes, Jefferson did write to me. He was kind enough to say [impersonating Jefferson]: ‘Medicine has never before produced any single improvement of such usefulness’.

Interviewer 1: That’s pretty cool. Has your idea spread anywhere else?
Jenner: Yes, in 1805 Napoleon vaccinated all his soldiers. In fact, because Napoleon was so supportive of vaccination, I was able to negotiate the release of a number of important prisoners of war. Apparently Napoleon was reported to have said [puts on a French accent] ‘Ah, Jenner – I can refuse him nothing’. By 1812 Arabic and Turkish translations of my work started to appear in central Asia. I hope it will eventually be compulsory to vaccinate. I believe that in time we can wipe this terrible disease off the face of the earth.

Interviewer 2: Well it was great talking to you today; I certainly learnt a lot about your work and how you made your breakthrough.
Interviewer 1: I also learnt a lot. I think the thing I will remember is that you were very scientific in your methods and you only published when you had proved your ideas worked. I will make sure I read your book. Thank you so much for being with us.

Jenner: The pleasure was all mine.
Imagine it is 1816 and you are at a public meeting where Edward Jenner is being interviewed. Fill out this worksheet with information from the role-play.

<table>
<thead>
<tr>
<th>How did this affect Jenner?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work of others</td>
</tr>
<tr>
<td>Chance</td>
</tr>
<tr>
<td>War</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>Inventions</td>
</tr>
<tr>
<td>Scientific method</td>
</tr>
<tr>
<td>Religion</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

Which of these was the most important and why?

Was this a development or a change?
Teaching notes

You will need three confident students to act out the script (Jenner and two interviewers). The rest of the class can use the information presented to complete the table with the key factors influencing Jenner.

After the role-play students can discuss the final two boxes of the table in pairs, or as a class, and come to a judgment.

Lesson development

A good way to develop their understanding further is to continue with the drama! Split the class into small groups of two to five students. They should identify key turning points from Jenner’s life that contributed to his success. They could then pick one and create their own tableau (silent freeze frame) of the event. Tableaux have the advantage they are quick (and silent!) to perform, but short unscripted role-plays can also work well.

For example:

- Jenner’s own inoculation as a boy
- Jenner’s examination of dairymaids
- Jenner’s first vaccination of his gardener’s son
- Napoleon’s program of vaccination of all his soldiers.

These can then be performed to the rest of the class, and the other students can identify the scenes and explain why they are turning points.