

Visit to the Edward Jenner Museum

Introduction

The [Edward Jenner](#) Museum at Berkeley, Gloucestershire is well worth a class visit if you are in the South West. Students can learn about the history of smallpox, Jenner's work and the disease's final eradication and also about modern understanding of immunology.

The activity

A class discussion of their answers to 'What made Jenner successful as a scientist?', and perhaps a comparison with other scientists described in the text book, would make a useful follow up.

Another issue that could be explored is why it took so long after Jenner's discovery to eliminate smallpox highlighting the fact that a scientific discovery is only the first step in the adoption of a new technology.

How science works

E the scientific community

Science Explanations

Ad Immunity can be provided artificially by exposing the individual to a form of the microbe that has been altered so that it is unable to cause disease but will still stimulate the production of antibodies. The process is known as vaccination. It is proving very difficult to develop an effective vaccine against some diseases such as the common cold, malaria and HIV. This is partly because the microbes mutate rapidly and are no longer recognised by the antibodies.

October 2008



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AT BERKELEY, GLOUCESTERSHIRE

So why is Dr Edward Jenner one of the most famous scientists of all time? It has been suggested that the work of Dr Edward Jenner led to more lives being saved than has the work of any other scientist. Is this accolade deserved? We have all heard of the experiment in which Jenner inoculated a healthy boy (James Phipps) with cowpox (*Vaccinia*) virus, and then subsequently proved him to be immune to the horrific smallpox (*Variola*) virus. Is this enough to have earned Jenner the fame and affection that has followed him the world over? Napoleon Bonaparte himself was moved to release two English prisoners of war following a letter of petition from Jenner. Napoleon is reported to have said “Jenner! We can refuse nothing to that man!” In the modern context Jenner is described as the Father of Modern Immunology, upon which the fields of vaccination, allergies, organ transplants and autoimmune diseases are based.

Your 1st task today is to find out more about Dr Edward Jenner, and decide why he was such a successful scientist.

Your 2nd task is to find out more about the real route to the eradication of smallpox, and so see how the work of Jenner made this a possibility.

The 3rd task is to investigate the detailed science behind immunology, using the displays in the 2 rooms upstairs in the museum.

First, watch the video. This will introduce you to all the work of Edward Jenner. List some of the other achievements of Edward Jenner below:

WHAT MADE DR EDWARD JENNER SUCCESSFUL AS A SCIENTIST?

Quality / Attribute	Description	Evidence from museum / research	How this helps or hinders Jenner in his work.
Qualification / training / experience			
Jenner's socio-economic background			
Narrow specialisation or multi-disciplined background?			
Personality and traits			
Basis for ambition to eliminate smallpox			

Supported by the scientific community?			
Supported by the establishment of the time?			
Shows empathy with the general population?			
Replication of initial findings?			
Dissemination of his findings			
Source of funding for vaccination work			

TIME LINE TO THE ERADICATION OF SMALLPOX.

By the beginning of the 19th Century, Dr Edward Jenner predicted that smallpox would be eradicated. He was right! Use the video and displays in the museum to complete dates on the timeline below:

Vaccination of James Phipps (**1796**)



Publication of "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 Cow Pox" (17)



Vaccination of the British Army against smallpox ()



Vaccination against smallpox became compulsory in England ()



1st World Health Organisation campaign against smallpox by seeking to achieve "Herd Immunity" began ()



2nd World Health Organisation campaign against smallpox by "Surveillance Containment" or "Ring Vaccination" began ()



Last case of smallpox in Europe ()



World Health Organisation announced the worldwide eradication of smallpox (**1980**)

INFLUENCES IN EDWARD JENNER'S LIFE:

Find the answers to the clues below, and then highlight them in the word search grid. Can you find any extra words associated with Edward Jenner?

1. This lady (last name) tested the idea of vaccination against smallpox by using smallpox itself to inoculate criminals from Death Row in Newgate Prison!
2. The surname of the farmer who protected his wife and children against smallpox by inoculating them with Cow Pox.
3. The first name of Edward Jenner's enthusiastic nephew.
4. The surname of Edward Jenner's great friend, to whom he dictated his book of 1798.
5. The doctor to whom Edward Jenner was first apprenticed as a 14 year old.
6. The consultant to whom Edward Jenner became a house pupil at St George's Hospital, London
7. The famous explorer whose ship's naturalist, Joseph Banks, asked Jenner to help document the artefacts from his trip around the world.
8. Edward Jenner used the pus from a Cow Pox lesion on the finger of this dairymaid.
9. The surname of Edward Jenner's friend, who built the "Temple of Vaccinia" in the gardens of The Chantry so that the poor could be vaccinated free of charge.
10. Edward Jenner fell in love with, and married this woman (first name) in 1788.

B	E	R	K	E	L	E	Y	F	G
C	A	T	H	E	R	I	N	E	J
A	P	M	U	P	O	S	M	R	U
P	X	O	N	C	P	A	R	R	Y
T	D	L	T	O	X	R	B	Y	B
A	L	Y	E	W	D	A	L	M	W
I	F	Z	R	P	Z	H	O	A	O
N	N	L	K	O	B	N	S	N	L
C	I	V	Q	X	I	E	S	L	D
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O	U	B	I	G	F	M	M	E	L
K	U	B	X	J	J	E	S	T	Y
Y	P	H	I	P	P	S	M	O	N
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