

Video Answer Key B1+ Intermediate

These answers correspond with the worksheet that accompanies Dr Patricia Fara's lecture, *Women and the History of Science*. This lecture can be found at www.cambridge.org/elt/lectureB1


This worksheet can be found at www.cambridge.org/elt/lectures along with a worksheet on Lecture skills – including note-taking skills – and more lectures.

Preparing for lectures

1.1 Answers will vary but the question should generate some interesting ideas in preparation for the lecture.

- 1.2
- 1 not related or not important: **irrelevant**
 - 2 the idea is a good one: **ideologically sound**
 - 3 treating a person differently: **discrimination**
 - 4 removed or defeated: **overthrown**
 - 5 against an idea: **in opposition**
 - 6 laughing in a cruel way: **mocking**
 - 7 to be worried about the future: **fear and trepidation**
 - 8 to be refused, rejected: **to be turned down**
 - 9 ways of considering an idea: **approaches**
 - 10 to believe an opinion about something or someone: **perceived**

Understanding the lecture topic and key ideas

 **Extract 1** (starts at 00:00 and ends at 06:23)

- 2.1
- 1T Audioscript: But for me the whole point of doing history is to understand more fully how we've arrived at our present situation and hopefully be able to do something in order to **improve the future**.
 - 2T Audioscript: Girton was the first women's only college at Cambridge and it was founded in 1869 and Hertha Ayrton came here a few years later in 1876.
 - 3F Audioscript: It's a rhyme which is of course **mocking** the pretensions of women who want to learn subjects like mathematics and physics. I think it's also expressing a certain amount of **fear and trepidation on the part of the men**.
 - 4F Audioscript: It articulates a **belief** that was prevalent then and I think to some extent still is **now**: you can either be a normal woman or you can be a good scientist but you can't possibly be both.
 - 5T Audioscript: women **couldn't** graduate from Cambridge University till 1949.
 - 6T Audioscript: My **basic question** is going to be how have women been perceived by historians of science

Listening for detail

Extract 2 (starts at 06:23 and ends at 9:17)

3.1 The first picture is a caricature, called a *lady of scientific habits*, of a woman made of books. It is a parody of a woman, warning that if women study they'll become 'abnormal' and lose their femininity.

The second picture represents the Goddess of Wisdom pulling back the curtain of knowledge, showing all the books of the encyclopaedia to a male student. So this picture symbolizes that although the *symbols* of science could be women the only people who were able to practice actively were men.

3.2 As this asks for personal opinion answers will vary, but the question should generate some interesting ideas in preparation for the extract which follows.

Extract 3 (starts at 09:17 and ends at 15:45)

3.3a 1 c 2 d 3 a 4 b

3.3b Suggested answers:

Mary Wollstonecraft wrote *A Vindication of the Rights of Women* (published in 1792).

Caroline Herschel was William Herschel's sister.

Rosalind Franklin got her finals in 1941 but was not allowed to graduate. She later took a PhD at Cambridge before working on DNA with Maurice Wilkins at Kings College, London. She was an expert X-ray crystallographer, and took many photographs (including a famous one of the double helix).

Maurice Wilkins showed a photograph of a double helix to James Watson. He later won the Nobel prize for the discovery of the structure of DNA, along with James Watson and Frances Crick.

Extract 4 (starts at 19:17 and ends at 29:43)

3.4 As this asks for personal opinion answers will vary.

3.5a Women who we do not see or hear about as much as their male equivalents and who have been excluded from history. History of science is about far more than great instruments, great equations, great men. It's also about how information became known about and spread throughout the world.

Dr Fara believes that women have a far greater role than 'heroes' such as being communicators, illustrators and educators. For example, Caroline Herschel and Marie Lavoisier.

3.5b Later in the lecture Dr Fara goes on to discuss Marie Lavoisier, Margaret Bryan, Jane Marcet, Mary Somerville and Mary Lyell.

Completing notes


Extract 5 (starts at 29:44 and ends at 31:59)

- 4a
- 1 either her two daughters or two pupils
 - 2 wrote (educational) textbooks
 - 3 the Victorian age (during the reign of Queen Victoria from 1837 to 1901)
 - 4 he was a blacksmith
 - 5 the fact that he paid tribute to (acknowledged) the work of Jane Marcet.

4b Note that it should help to look for clues in the surrounding text e.g. if the preceding word is *the* then at least one of the missing words in the gap will be a noun.

- 1 physics school
- 2 astronomy
- 3 electrical equipment
- 4 written by
- 5 histories of science

Summarising the lecture conclusion

 **Extract 6** (starts at 34:47 and ends at 35:29)

5 **Suggested answer:**

Women should be recognized and given credit for their involvement in making science the important subject it is today. Women didn't go to university and therefore had to pursue science differently, but that does not mean that their contribution was not important.

Audioscript: So women as well as men have participated in the collective endeavour that brought about science's ubiquitous presence. And broadening what counts as science's history entails recognizing and also crediting women's involvement. And I think the important thing to recognize is that in the past women made different contributions from men. They didn't go to university, they were discriminated against, they were forced into making different discriminations from men. But I think it's also essential to recognize that different does not necessarily mean insignificant.

6.1a As this asks for personal opinion answers will vary.

6.1b Some ideas are:

- 1 Biographical information such as nationality; work she was involved in; dates she was most prolific; comparisons with male colleagues of the time ...
- 2 The scientific discipline with a description of the work; the name of any group that was formed; who was part of the group; what was the group famous for ...

6.1c **Suggested introductions:**

- 1 Lise Meitner was an Austrian born physicist. She was part of the team that discovered nuclear fission, although her role was overlooked by the Nobel committee in favour of her male colleague, Otto Hahn. She was inspired by ...
- 2 The Women in Cell Biology group was founded in the early 1970s by a group of female cell biologists in response to the under-representation of women in cell biology in particular. Cell biology has traditionally been ...