



C I E N T Í F I C A S

P A S A D O

P R E S E N T E

F U T U R O

TEACHING GUIDE

Women Scientists: Past, Present and Future

Objectives

- To challenge female stereotypes around Science, Technology, Engineering and Mathematics.
- To raise awareness of women scientists of the past and the present, in order to motivate woman scientists of the future.
- To promote reflection on gender stereotypes around professions in the sciences.
- To raise awareness of scientific research by women.
- To provide an educational resource for use in the classroom that helps achieve these goals.

Context

When we think of people who have made contributions to science, we almost invariably think of men. This stereotype:

- Promotes the idea that scientific achievement is the domain of men
- Discourages girls who enjoy science from going on to study it at university, and it discourages female science graduates from taking a leading role in research projects.

As a result, fewer female than male students enrol for science and engineering degrees, and both research groups and technology companies are overwhelmingly male-led. If we want to challenge this state of affairs, we need to provide young people with female role models in the world of science. This will help to change the way our young people view the world of science, showing that contributions to science are made by people who are distinguished by their intelligence, their commitment and their passion rather than their gender. And it would help to give girls the confidence to succeed: "If these women have done it, then so can I."

Proposed activities

Activity 1: People at work

Task

Draw people doing different jobs. You can draw people working at home or in an office; in a factory or working with the public. Try to include some jobs that are related to science, technology and engineering.

Description

Students are asked to complete the drawing task. Once the students have completed their drawings, the teacher can analyse:

- Whether the drawings show evidence of gender stereotypes (traditional 'male' and 'female' jobs)
- If any of the jobs are in the fields of science, technology and engineering
- If these jobs have been drawn by boys or girls.

The drawings then provide the starting point for a class discussion about stereotypes at work and, specifically, gender stereotypes with regards to work in science, technology and engineering. This leads into a discussion about what work in the fields of science, technology and engineering involves. Answering this question provides an opportunity to raise awareness of the work performed in these fields. A possible extension activity would be to arrange visits by women in these professions, to offer first-hand accounts.



Activity 2. Women in science quiz

Task

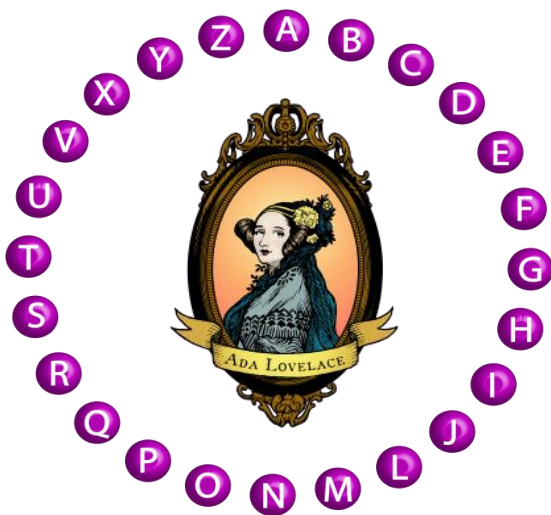
Team up with three or four fellow students and play the science-themed quiz.

Description

Students form teams of three or four, and compete against the other teams in the class. Download the quiz:

- <http://institucional.us.es/cientificas/en/>

If there are any questions that no team is able to answer, then teams can be allowed to use the internet to search for the correct answer. The team with the most correct answers is the winner. The winning team can be awarded a diploma to provide additional motivation.



Activity 3: Meeting women scientists from the past

Task

Hypatia of Alexandria, Marie Curie, Rosalind Franklin, Hedy Lamarr and Ada Lovelace are all women scientists from the past. Make a wallchart to display the following information:

- When and where they lived
- Images of the women and their scientific achievements
- Some of the things they are best known for.

Description

This activity can be completed in the same teams as before, or individually. If preferred, instead of a wallchart, students could make a shared online document or presentation. This activity provides an opportunity for broad skills including, research, citing sources and respecting copyright, and organizing and presenting information. It gives students the chance to discover information about the scientists in the comic in the next activity.



Activity 4. “Women Scientists: Past, Present and Future” – the comic

Task

Read the comic and find out a bit more about the stories of women scientists, past and present.

Description

Download the comic **Women Scientists: Past, Present and Future**:

- <http://institucional.us.es/cientificas/en/>

After reading the comic, students discuss: Did your wallcharts (or presentations) from the previous activity include any of the information in the comic? What did the women scientists of the present say about working in the fields of science, technology and engineering?

Activity 5. Interviewing a woman scientist, engineer or technologist

Task

Interview a female scientist, engineer or technologist to find out what life is like for women who work in those fields. Find out if they have encountered obstacles in their professional career because they were women.

Description

This activity will need to be arranged in advance. It could be completed either individually or as a team. If it is not possible to do the interview in person, students could prepare questions and send them by email to a woman scientist. In this case, they will need to contact possible interviewees via the website of a university institution or research centre.



This guide is part of the Scientific activity. Past, present and future in its versions of play and comic in Spanish and English. If you want more information about this initiative, you can visit our website <http://institucional.us.es/cientificas/>

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Back cover: Photograph of Carlos Martín with filter by Francisco Vega

Redaction: Scientists team: past, present and future

Desing: Scientists team: past, present and future,
Department of Equality of the Aldaia City Council.