

## Background information

**Title:** “Women Inventors”

**Brief Description:** This activity introduces children to different women inventors in fields such as science, technology, or health through an augmented reality experience.

**Keywords:** women, stem, steam, women inventors, augmented reality, creativity

**Target audience:** teachers with students (ages 6-12), students with parents (ages 6-12), students by themselves (ages 9-12)

**Age range:** 6-12

**Context(s):** This activity can be carried out anywhere, included but not limited to a classroom, museum/centre and at home.

**Time required:** Because of its nature, this activity can take from 1h (e.g. at home as homework or educational reinforcement) up to a 4/5 hour session.

**Technological tools required:**

- Mobile device/s with MetaClass AR app installed.
- Marker sheet (attached) printed to visualize the AR.
- (Optional) Computer/s with Playing with Protons Authoring Tool to create AR Experiences

**Author(s)’s background:** Expert teachers on STEAM education.

**Connection with the curriculum:** This activity connects to the different STEM fields covered in primary education, mainly science, technology, and mathematics, adding the artistic view from the exercises proposed. No prior knowledge is required.

**Learning objectives:**

- To understand the contributions of women inventors in various fields.
- To encourage critical thinking and discussion on gender roles in innovation.

- To promote research skills and historical analysis.

**Guidance for preparation:** For the AR-enhanced activity, the adult (teacher or parent) should have the cards attached in Annex printed and cut (one pack per group), so they can be distributed among children. If the activity is carried out inside the classroom, we recommend creating groups of 5/6 students so they can work together linking the different inventors-inventions. At home, students can work by themselves with the guidance of the parent if necessary.

## 1. Pre-Activity

Elicit students' curiosity and existing knowledge about inventors, focusing on whether they can name any women inventors.

Introduce the topic through a short video series highlighting key women inventors throughout history.

*\* Here you can find a list of interesting videos (in Spanish) used in this activity. With this reference a teacher/parent can easily find similar resources in Youtube in their own language.*

[https://drive.google.com/drive/folders/1SVcxhhHdq8XWnO\\_SEwIWclpOQp3dPeAQ?usp=sharing](https://drive.google.com/drive/folders/1SVcxhhHdq8XWnO_SEwIWclpOQp3dPeAQ?usp=sharing)

## 2. Activity

### Initial Discovery:

- Students are divided into small groups and given a set of cards (Annex).
- First, they try to match the inventor with the invention putting the images together without any help.



*Example of the cards pairing Ada Lovelace with a Computer (programming).*

- Then, using MetAClass app, they discover if they were right. If pairs match, the portrait of the inventor and image of the invention will appear. Otherwise, nothing will happen.



*Once matched, the images appear.*

#### **Research and Presentation:**

- Once finished the initial discovery, each group is assigned a woman inventor (from the pull above) to research.
- Groups present their findings, focusing on the inventor's contributions, challenges faced, and impact on society.

#### **Invention Crafting & AR Project Construction:**

- Students use craft materials to create a simple prototype of an invention by their woman inventor.
- Then, they collaboratively create an AR project using Protons Authoring Tool about their woman inventor, based on the prototype crafted.
- Each project can contain different markers showing pictures, short videos, 3D models etc.
- They then present their prototype and explain its significance. For this, they can previously record a video using the AR, or make a demo in real time.

### 3. Post-Activity

#### Discussion and Reflection:

- Students discuss the importance of recognizing contributions from diverse groups, including women, in the field of invention.
- Reflect on how the activity changed or reinforced their views on gender roles in innovation.

#### Quiz and Recap:

- A short quiz to reinforce the key women inventors and their contributions.
- Recap of the key concepts and historical figures discussed.

## Annex: AR Initial project and markers



To load this Project:

1. Open MetAClass app
2. Go to Viewer
3. Tap on “Import”
4. Tap on “Scan”
5. Point at this QR code

Markers to print and cut:





