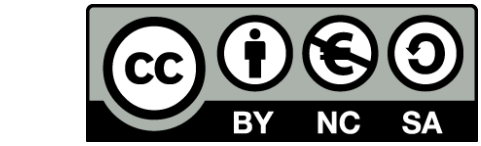
USER GUIDE



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STEAM 4 GIRLS: USER GUIDE

1. Introduction of the project.

1.1. Project overview.

STEAM 4 Girls is a project specifically designed to address the gender gap in STEAM fields. The vision of the project focuses on providing interdisciplinary and gamified educational experiences, whose purpose goes beyond simply teaching STEAM principles. It also seeks to inspire and empower young women. This project is not limited to the transmission of knowledge; it is also geared towards fostering key skills such as problem solving, creativity and teamwork.

Through gamified challenges, it aims to make learning engaging and relevant, seeking to provide an educational environment that not only teaches, but also cultivates essential skills and motivates young women's participation in STEAM. The overall vision of the project includes creating an inclusive environment where women feel encouraged to explore, question and participate fully in STEAM activities.

1.2. Purpose of the User's Guide.

The purpose of this guide is to provide teachers and facilitators with a complete understanding of the correct use and application of the educational escape room "The 5 women STEAM". The aim is not only to provide guidance on how to navigate and solve the escape room challenges, but also to offer a series of resources, activities and tools that complement the contents worked on in the escape room, deepening and reinforcing the topics covered in it.

1.3. Presentation of the narrative used in the escape.

"The 5 Women STEAM is a unique educational online escape room, whose storytelling explains that it has been conceived by five women experts in STEAM disciplines with the aim of challenging the generations of the future. Participants will embark on an interdisciplinary and gamified experience designed to challenge their minds and encourage learning in science, technology, engineering, art and mathematics.

Guided by the stories of these trailblazing women, participants will face challenges that go beyond the mere transmission of knowledge. Each choice of videotape, which appears on the first screens of the online escape, represents a STEAM speciality, which will take them through a series of challenges that, if overcome, will give them the chance to discover the hidden identities behind each discipline. Upon successful completion, participants will unveil an heirloom, entrusted exclusively to future generations.

"The 5 STEAM Women" aims to inspire, empower and demonstrate that anyone, regardless of gender, can excel in STEAM disciplines. In addition to highlighting the relevance and existence of important women scientists by giving them a voice and recognition, this experience combines a captivating narrative, stimulating challenges and an educational journey that connects the past with the future.

2. STEAM Basics

An understanding of the fundamentals of STEAM (science, technology, engineering, arts and mathematics) is essential to address the complexity of this interdisciplinary educational approach. This section explores the definition and components of STEAM, highlighting its importance in education and examining the gender perspective within this framework.

2.1 Definition and components of STEAM

STEAM is an educational approach that integrates the disciplines of science, technology, engineering, arts and mathematics to foster critical thinking, problem solving and creativity. Rather than approaching these disciplines in isolation, STEAM promotes the connection between them, recognising the interdependence and synergy between science, art, engineering, mathematics and technology.

Science and technology provide the framework for research and innovation, engineering sparks curiosity and solves problems, the arts inspire creativity, and mathematics provides the structural foundation. The combination of these disciplines enhances students' ability to address real-world challenges in a holistic way.

Science is based on careful observation and experimentation to understand and explain natural phenomena. It helps us advance in a variety of fields, from technology to medicine and health, enabling us to develop new medicines and improve people's quality of life.

Technology involves the creation and application of new or improved tools and systems to solve problems and improve efficiency in various areas of everyday life. From electronic devices that facilitate communication to advances in industrial automation that increase production, technology has a profound impact on the way we live and work. As technological innovation advances, so does our ability to address global challenges.

Engineering involves the creative application of scientific and mathematical principles to design and build practical solutions to complex problems. From the creation of architectural structures to the development of advanced technologies, engineering plays a crucial role in improving infrastructure and people's quality of life. Each engineering breakthrough represents an effort to innovate and find efficient solutions to address challenges in areas such as energy, health, communications and the environment.

Mathematics involves the creation and application of new methods and concepts to solve problems and improve efficiency in various fields of knowledge. From solving equations that model natural phenomena to optimising processes in engineering, mathematics plays a fundamental role in our understanding and manipulation of the world around us.

Art involves the creation and application of creative expressions to communicate ideas, emotions and experiences in unique ways. From painting and sculpture to music and dance, art plays an essential role in our ability to explore and understand the diversity of the human condition. Each form of artistic expression provides a means to reflect on the world around us and offers unique perspectives that enrich our understanding of culture and history.

2.2 Purpose of STEAM education

The central goal of STEAM education is to cultivate creativity and 21st century skills in students, stimulating scientific and technological growth and progress. This is achieved through an interdisciplinary education that integrates science, technology, mathematics, arts and engineering, linking content to students' life experiences and fostering the achievement of educational goals.

STEAM education offers an action-based, experiential play-driven approach to the teaching-learning process that breaks down the barriers between disciplines, exploring the intersections between art, science, engineering, mathematics and technology.

In STEAM, learning is conceived as a continuous and particular process, constructed and reconstructed as learners interact dynamically with their physical, social and cultural environment. The construction of objects plays an essential role in this process, as students address problems through processes of enquiry and design, using interaction and construction as keys to the creation of learning and knowledge.

Motivation plays a crucial role in these creative processes, stimulating interest, intellectual satisfaction, a sense of achievement, curiosity and wonder. The aim is to create enjoyable, meaningful, fun, engaging and immersive learning environments that cater for both the cognitive and affective development of learners. Collaborative construction is also valued, recognising that learning is enriched through interaction between individuals, following the "think-compare-share" perspective. This holistic approach seeks not only to cultivate knowledge, but also to foster students' personal and social development.

2.3 Gender perspective in STEAM

The gender perspective in STEAM recognises the importance of addressing historical and current disparities in the participation of women in these disciplines. Historically, women have been underrepresented in STEAM, and the gender perspective seeks to change this dynamic.

The inclusion of a gender perspective in STEAM involves creating educational environments that are equitable and accessible to all people, regardless of gender. It strives to eliminate gender stereotypes, encourage diversity and provide female role models in STEAM. In doing so, it seeks to inspire more women to actively participate in these disciplines and contribute to building a more inclusive and egalitarian future.

3. Gamification of STEAM education

Gamification in STEAM education represents an innovative approach that uses game-like elements and dynamics to enhance student engagement, motivation and learning. This section explores the concept of gamification, the advantages it offers in the learning process and how game elements are integrated into the STEAM project.

3.1 Concept of gamification

Gamification is the application of elements characteristic of games, such as challenges, competitions, rewards and narratives, in non-game contexts, such as education. In the context of STEAM education, gamification

seeks to transform the teaching-learning process into a more engaging and participatory experience, using game mechanics to motivate students and make learning more interactive.
Gamification in STEAM is not limited to simply incorporating games, but focuses on designing gamified activities that represent the playful essence of learning, allowing students to explore STEAM concepts in a fun and challenging way.

3.2 Advantages of gamification in learning

The advantages of gamification in STEAM learning are diverse and contribute to the effectiveness of teaching. Some of the most notable advantages include:

- Increased motivation: gamification fosters intrinsic motivation by making learning more exciting and relevant for students. Game elements, such as rewards and challenges, stimulate interest and active participation.
- Active learning: Gamification promotes active participation as learners take an active role in problem solving and decision making. This facilitates knowledge retention and practical application of STEAM concepts.
- Collaboration and positive competition: Group games and friendly competitions encourage collaboration among students while maintaining a positive competitive environment. This helps develop social skills and teamwork.
- Immediate feedback: play elements allow for the incorporation of immediate feedback, which facilitates the understanding of concepts and the correction of errors in a timely manner.

4. STEAM 4 Girls methodology

The STEAM 4 Girls methodology focuses on providing an inclusive and stimulating educational experience focused on STEM fields through gamification. This methodology is underpinned by fundamental principles that seek not only to teach STEAM knowledge, but also to inspire and empower participants.

4.1 Basic principles of the methodology

The basic principles of the STEAM 4 Girls methodology are founded on equity, inclusion and stimulating women's interest in STEAM fields. These principles include:

- **Gender equity:** ensuring equal opportunities and access for participants, actively addressing gender stereotypes and fostering an inclusive environment.
- **Personalised inspiration:** recognising the diversity of skills and interests among participants, tailoring teaching to meet their individual needs and stimulating their curiosity.
- **Meaningful gamification:** incorporating playful elements in a meaningful way to make learning engaging, challenging and relevant, using gamification as a motivational tool.
- **Interdisciplinary approach**: the STEAM 4 Girls methodology embraces an interdisciplinary approach by designing projects that integrate science, technology, engineering, art and mathematics in a synergistic way. Projects are designed to reflect real-life situations and address complex problems,

allowing participants to see the connection between disciplines and apply knowledge in a practical way.

5. Escape room:

Link al juego: STEAM 4 girls escape

5.1 Escape room set-up:

Welcome to the virtual escape room "The 5 STEAM women". This exciting challenge will be exclusively available in virtual format, which means you can participate from the comfort of your home or classroom at any time you wish.

Technical requirements:
Access the escape room from your preferred device: computer, tablet, smartphone. The magic of "The 5 Women STEAM" will unfold before you in the digital world.
To fully enjoy the experience, make sure you have a stable internet connection. No additional downloads are required. The escape room has been designed to be compatible with various devices and conventional web browsers.

Estimated duration:
The exciting adventure is designed to take approximately 1 hour. Participants will immerse themselves in challenges, unravel mysteries and discover the legacy that awaits them.

5.2. Game rules:

Welcome to "The 5 women STEAM"! Here, you will be immersed in a fascinating virtual escape where the choice and the challenge are in your hands. Here are the clear rules to enjoy the experience to the fullest:

How to play:

Start screen. At the start, participants will have to make key decisions by choosing one of five video tapes, each representing a STEAM discipline. They will have to overcome the challenges proposed in each of the disciplines to solve the final challenge.

The dynamics of the game is as follows: after overcoming all the challenges in a discipline, the players will return to the initial screen by means of a return arrow, and they will choose which discipline they want to face each time. Once they have overcome the challenges of all the disciplines, they will be able to unlock the final tape, a more special videotape that will also appear on the screen, but in which, even if they choose it, they will not be able to advance. It will not be until they go through all the disciplines that they will be able to get the information they need to unlock the password that locks the final tape to continue challenging themselves on the last screen.

Development of the game.

Throughout the stages of each discipline, participants will follow a consistent process: introduction, question 1, question 2, question 3 and challenge. Successfully completing each challenge will unlock the next screen, immersing them deeper into the story.

STEAM Discovery:

They will face challenges that will test their ingenuity, creativity and culture. Correct answers will bring them closer to discovering the story behind each discipline.

5.3. Storytelling: the 5 STEAM Women

1. In "The 5 STEAM Women", participants will embark on a unique experience based on a captivating storytelling. The narrative focuses on five exceptional women, each an expert in a STEAM discipline. Through decades of dedication and achievement, these women have become leaders in science, technology, engineering, art and mathematics.

2. Participants will meet these women through an enigmatic television set, which will be the graphic escape context, and which acts as a bridge between generations, connecting the legacy of these experts with the future potential of the participants. Each of them represents a STEAM discipline and challenges participants to explore their worth in this intriguing escape.

3. While these women may have been pioneers in their fields, the story highlights that their legacy is not exclusive. Each challenge the participants will face hides one of the women protagonists of this escape. The final challenge hides an heirloom that not only represents their efforts, but also the knowledge and wisdom they want to share with future generations.

5.4. Escape room development

o Details on the different stages of the escape; clues and solutions.

This is followed by an explanation of how the different disciplines are divided, and an explanation of the interactive elements or key clues that players will have to take into account in order to overcome the challenges and challenges proposed throughout the escape.

It should be emphasised that screens 1 and 2 are simply introductory to the story of the escape, and have the interactive elements necessary to start it.

Screen 1. Cover STEAM 4 girls

Description: serves as a start screen.

Elements: option to start the escape.

Sub-screen 1.1 Introduction

Text that appears on the screen: this message has been created by five women, each an expert in a STEAM discipline. We are addressing anyone who is daring and has the light of knowledge that has led them to find

this TV. Just because we have been the reference for all STEAM disciplines (science, technology, engineering, art and mathematics) doesn't mean that you can't be, so we want to inform you that behind the following challenges you will find a relic that we have entrusted only to future generations. Each videotape you choose represents the speciality of one of us. Solve the challenges we present, discover who we are and you will be one step closer to unveiling the protected relic.

Screen 2. The 5 disciplines

Description: 5 video tapes appear, each focusing on a different STEAM skill, and a special tape that will lead you to the final code.
Elements: 5 video tapes and a special tape.

Note that, from this point on, the disciplines have a series of questions whose correct answers are highlighted in purple.
The choice you make on this screen 2, will take you to any of the following screens, and consequently, to start solving the escape by the selected discipline.
- screen 3: science,
- screen 4: technology,
- screen 5: engineering
- screen 6: mathematics,
- screen 7: art.

Screen 3. Science

Description: Introductory screen to this discipline.

Text that appears on the screen: Science is based on careful observation and experimentation to understand and explain natural phenomena. It helps us to advance in a variety of fields, from technology to medicine and health, enabling us to develop new medicines and improve people's quality of life.

Sub-screen 3.1. Question 1

What percentage of Nobel Prize winners are women?
a) Less than 10%.
(b) Between 10 and 30 per cent
c) Between 30% and 60%
d) More than 60%.
(An orange circle will appear somewhere on the screen.)

Sub-screen 3.2. Question 2

Who was the first woman to receive a Nobel Prize and in which year was she first awarded it?
a) Rosalind Franklin and 1952
b) Marie Curie and 1903
c) Jane Goodall and 1974
d) Barbara McClintock and 1983
(A blue circle will appear somewhere on the screen.)

Sub-screen 3.3. Question 3

Which fundamental principle, related to the disintegration of atomic nuclei, was discovered by Marie Curie and Pierre Curie?
a) Uncertainty principle
b) Superposition principle
c) Conservation of energy principle
d) Radioactive decay principle
(A green circle will appear somewhere on the screen.)

Sub-screen 3.4. Challenge

A picture of a periodic table will appear with 4 compounds highlighted in it

- U: uranium - orange
- V: vanadium - blue
- O: oxygen - green
- K: potassium - yellow

Text that appears on the screen:
Do you remember the colour of the circles that have been appearing? Now each colour is associated with an element of the periodic table.
To solve this challenge you have to sort the compounds according to the order in which their corresponding colours have been appearing.
(A yellow circle will appear somewhere on the screen).
Answer: U→V→O→K

By answering these 4 questions they find the name and face of the STEAM woman protagonist.

Sub-screen 3.5. Marie Curie

Marie Curie, winner of the Nobel Prize in Chemistry in 1903, shared with her husband, and in 1911, alone, was a pioneering scientist for her groundbreaking research into radioactivity. Together with her husband and Henri Becquerel, her contributions transformed physics and chemistry, paving the way for advances in medicine, such as X-ray machines. Her dedication to science and discoveries continue to inspire generations of scientists.

Milestone: THE PRINCIPLE OF RADIACTIVE DISINTEGRATION

Screen 4: Technology

Description: Introductory screen to this discipline.

Text that appears on the screen: Technology involves the creation and application of new or improved tools and systems to solve problems and improve efficiency in various areas of everyday life. From electronic devices that facilitate communication to advances in industrial automation that increase production, technology has a profound impact on the way we live and work. As technological innovation advances, so does our ability to address global challenges.

Sub-screen 4.1. Question 1

What percentage of women scientists do you think there are in STEAM (science, technology, engineering, art and mathematics) disciplines?

a) Less than 30%.
b) Between 30 and 40 per cent
c) Between 40% and 60%
d) More than 60%.

Sub-screen 4.2. Question 2

Who was an outstanding pioneer in the field of technology and programming, being recognised as the first computer programmer?

a) Ada Lovelace
b) Grace Hopper
c) Margaret Hamilton
d) Sheryl Sandberg

Sub-screen 4.3. Question 3

Which innovative creation of the Victorian era is Ada Lovelace directly associated with, being recognised as the first computer programmer?

a) The power loom
b) The telephone
c) The analytical machine
d) The steam printing press

Sub-screen 4.4. Challenge.

Text that appears on the screen:

- The most repeated letter in the image corresponds to a number as shown in the following cipher - remember it to solve the password for this challenge!

- What is the most repeated letter in the picture? Answer: N.

On the same screen there is a code that tells us that the letter N corresponds to the number 14.

Sub-screen 4.5. Unlock screen

Text that appears: Press the number that unlocks the next screen.

Number to press: 14

By answering these 4 questions they find the name and face of the STEAM woman protagonist.

Sub-screen 4.6. Ada Lovelace

Ada Lovelace, born in 1815, was an English mathematician and writer who pioneered computer programming through her work on "Charles Babbage's analytical machine". Her vision that the machine could manipulate symbols laid the foundations of modern programming. Her legacy inspires generations and Ada Lovelace Day annually celebrates her contributions to STEM sciences and technologies, highlighting the achievements of women in these fields.

Milestone: THE ANALYTICAL MACHINE

Screen 5: Mathematics

Description: Introductory screen to this discipline.

Text that appears on screen: Mathematics involves the creation and application of new methods and concepts to solve problems and improve efficiency in various fields of knowledge. From solving equations that model natural phenomena to optimising processes in engineering, mathematics plays a fundamental role in our understanding and manipulation of the world around us.

Sub screen 5.1. Question 1

Ranking women scientists in areas: mathematics vs. physics

Several names of women scientists will appear and you will have to choose which of them excelled in the field of mathematics.

Names:

- Emmy Noether
- Sofia Kovalevskaya
- Mary Cartwright
- Lisa Meitner
- Marie Curie
- Lisa Randall

Those women who excelled in the field of engineering are highlighted in purple. The rest were in the discipline of science.

Sub-screen 5.2. Question 2

What was Maria Gaetana Agnesi's most outstanding contribution to the field of mathematics?
a) Development of chaos theory
b) Creation of integral calculus
c) Formulation of prime number theory
d) Development of non-Euclidean geometry

Sub-screen 5.3. Question 3

In which area other than mathematics did Maria Gaetana Agnesi excel?

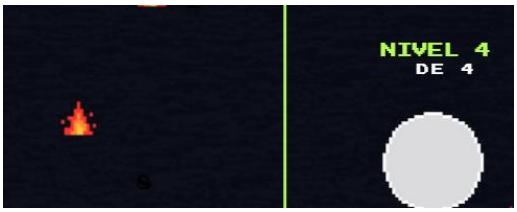
a) Philosophy
b) Astronomy
c) Physics
d) Theology

Sub-screen 5.4. Challenge

Players must find the value of the golden number hidden on the slide.

A draggable circle will appear on the screen and they will have to move it around the screen to discover the numbers hidden in it.

Text that appears on the screen: Use this magnifying glass to find the numbers hidden on the screen. The numbers you find are the ones that will give you the value of the golden number.



And dragging is discovered→

With all the numbers obtained (the 1, the 6, the 1, and the 8) they must form the golden number. The only golden number option that contains all these numbers is the first one.

Correct choice: 1,618

By answering these 4 questions they find the name and face of the STEAM woman protagonist.

Sub-screen 5.5. Maria Gaetana

Maria Gaetana Agnesi (1718-1799) was a prominent Italian mathematician and philosopher known for her work in calculus, most notably her book "Instituzioni Analitiche" (1748). Considered the first comprehensive guide to calculus, she dealt with topics such as differential calculus, integral calculus and properties of curves. Agnesi also devoted himself to philanthropy, caring for the needy after his father's death, and his legacy is notable for making mathematics accessible to a wider public.

Milestone: THE "AGNESI WITCH" CURVE

Screen 6: Engineering

Description: Introductory screen to this discipline.

Text that appears on screen: Engineering involves the creative application of scientific and mathematical concepts to design and build practical solutions to complex problems. From the creation of architectural structures to the development of advanced technologies, engineering plays a crucial role in improving infrastructure and people's quality of life. Each engineering progress represents an effort to innovate and find efficient solutions to address challenges in areas such as energy, health, communications and the environment.

On the following sub-screens (those corresponding to questions 1, 2 and 3) a yellow square with a picture of an umbrella inside will appear. It is this picture that you will have to remember in order to unlock the screen showing the female protagonist of this discipline.

Subscreen 6.1. Question 1

Classification of women scientists in areas: engineering vs. science

Several names of women scientists will appear and you will have to choose which of them excelled in the field of engineering.

Nombres:

- Rosalind Franklin
- Barbara McClintock
- Jane Goodall
- Ángela Ruiz Robles
- Hedy Lamarr
- Elsie Eaves

Those women who excelled in the field of engineering are highlighted in purple. The rest were in the discipline of science.

Sub-screen 6.2. Question 2

What was Inge Lehmann's main contribution to geophysics?
a) Discovery of the ozone layer
b) Identification of the Earth's inner core
c) Research on the Earth's atmosphere
d) Development of seismic technologies

(On this screen you will see a drawing of a yellow square with a picture of an umbrella inside it.)

Sub-screen 6.3. Question 3

Which method did Inge Lehmann use to make her discovery about the Earth's inner core?
a) Telescopic observation
b) Seismic wave analysis
c) Meteorite studies
d) Laboratory experiments

(On this screen you will see a drawing of a yellow square with a picture of an umbrella inside it.)

Subscreen 6.4. Challenge

Text that appears on the screen: What is the picture that appears on all the previous screens? Click on it to advance to the next screen.

Answer: umbrella.

By answering these 4 questions they find the name and face of the STEAM woman protagonist.

Subscreen 6.5. Inge Lehmann

Inge Lehmann, a leading Danish seismologist, discovered the Earth's inner core in 1936 while analysing seismic data. Her discovery, revealing the existence of a solid core, revolutionised the understanding of the Earth's structure. Lehmann, educated in mathematics in Copenhagen and Cambridge, received numerous awards and is remembered as a pioneer in geophysics.

In 1936, Inge Lehmann made a revolutionary discovery when she analysed seismic waves from earthquakes, revealing distinct layers of the Earth's core. Her proposal of a solid inner core, previously considered liquid, transformed the understanding of the Earth's structure and cemented her place as a pioneer in seismology.

Milestone: Earth's Inner Core

Screen 7: Art

Description: Introductory screen to this discipline.

Text that appears on screen: Art involves the creation and application of creative expressions to communicate ideas, emotions and experiences in unique ways. From painting and sculpture to music and dance, art plays an essential role in our ability to explore and understand the diversity of the human condition. Each form of artistic expression provides a means to reflect on the world around us and offers unique perspectives that enrich our understanding of culture and history.

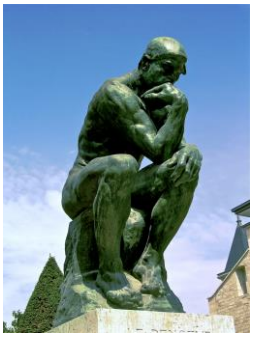
Sub-screen 7.1. Question 1

Which of these women was not an artist?
a) Frida Kahlo
b) Georgia O'Keeffe
c) Camille Claudel
d) Mary Anning

Sub-screen 7.2. Question 2

Which of these two sculptures belongs to Camille Claudel?
Slide with the 2 images. The players must choose the correct one.

Camille: age of maturity: 

Rodin: thinker: 

Sub-screen 7.3. Question 3

Which of these two sculptures belongs to Camille Claudel?
Slide with the 2 images. The players must choose the correct one.

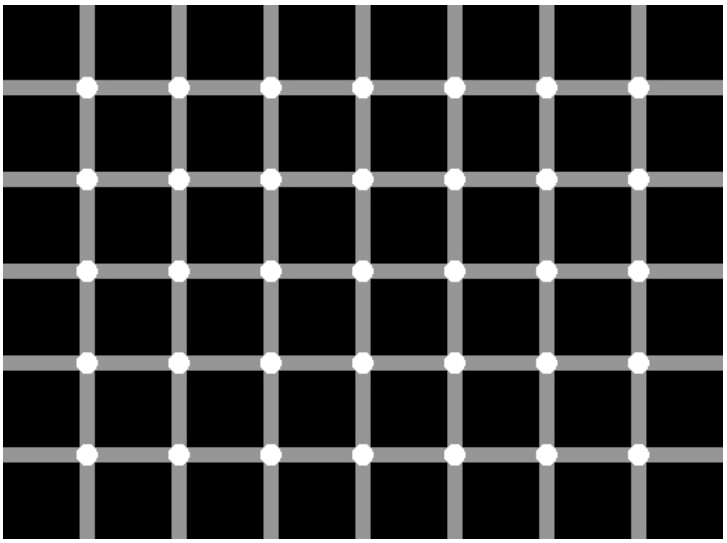
Camille, the great waltz: 

Rodin, the kiss: 

Sub-screen 7.4. Challenge: optical illusions

The following image will appear on the screen and you will have to answer the interactive multiple choice question:

- **How many black dots are there in the picture?**
  Answer choices: 14, 15, 0 (correct answer), 5,7



By answering these 4 questions they find the name and face of the STEAM woman protagonist.

Sub-screen 7.5. Camille Claudel

Camille Claudel was a 19th century French sculptor, renowned for her talent and collaboration with Auguste Rodin. Despite her skill, she faced challenges due to censorship of her works. Her complicated life and mental problems led her to be admitted to hospital in 1913, where she remained until her death in 1943.

Camille Claudel's most notable works include "The Age of Maturity", which symbolises the emotional complexities of human relationships, and "La Valse", which depicts a couple dancing. Her ability to capture movement and emotion in stone established her as a prominent figure in sculpture.

Milestone: SCULPTURE: A DEEP UNDERSTANDING OF EMOTIONS.

You will need to know all the names of the female protagonists in each discipline in order to access the final code screen.

As we have already mentioned, once you succeed in overcoming and obtaining the information after having solved the challenges of all the disciplines, you will be able to access the last 3 screens to solve the final code and finally advance to the conclusion screen and congratulations.

Screen 8: The last challenge

Sub-screen 8.1. Final screen locked

An interactive question with multiple choice answers appears on the screen:

This screen is only unlocked if you have managed to unmask the 5 STEAM women, hidden behind their challenges. do you remember who they are? 3 of them are presented here, so mark them appropriately.

Five pictures of different women scientists are shown as answer options, from which you have to choose 3. The correct answers are shown in the picture below:

Sub-screen 8.2. Final recap screen of the 5 STEAM women

Description: the 5 STEAM women will appear on the screen with their image, discipline, name and date of birth.

Text that appears as instructions to unlock the next slide: sequence = initial name of the women S - T - E - A – M

Science → Marie Curie
Technology → Ada Lovelace
Engineering → Inge Lehmann
Arts → Camille Claudel
Mathematics → María Gaetana Agnesi
Password: M→A→ I → C→ M

Sub-screen 8.3. Final password part 1

It presents a series of milestones, of which you will only have to keep the numbers that correspond to those discovered by the 5 STEAM women protagonists of the escape.

Text that appears on the screen: you only need the discoveries of our protagonists to obtain the key number.

1. SCULPTURE:
2. THE "AGNESI'S WITCH" CURVE
3. INNER CORE OF THE EARTH
4. THE PENICILLIN

5. THE THEORY OF RELATIVITY
6. THE ANALYTICAL MACHINE
7. LAW OF CONSERVATION OF ENERGY
8. ENDOSYMBIOTIC THEORY
9. THE PRINCIPLE OF RADIOACTIVE DECAY

Text that appears as instructions to unlock the next slide: What is the number that create the main characters' discoveries?

Password: 12369

Sub-screen 8.4. Final password part 2

Text that appears on the screen:

- Key number that unlocked this screen = XYZVW
- Final password: Year of birth of **(X - Y + Z - V + W)**

Being **XYZVW = 12369** (number obtained from the previous slide and which has unlocked this screen) and being that:

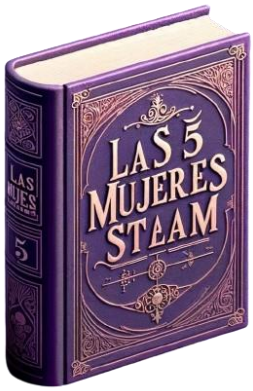
- **1 – Sculpture** → landmark belonging to Camille Claudel → year of birth **1864**
- **2 - The curve "Witch of Agnesi"** → Maria Gaetana Agnesi → **1718**
- **3 - Inner core of the earth** → Inge Lehmann → **1888**
- **6 - Analytical machine** → Ada Lovelace → **1815**
- **9 - Principle of radioactive decay** → Marie Curie → **1867**

The final password will be obtained after performing the following operation:
1864 – 1718 + 1888 + 1815 – 1867 = 2086

Final password: 2086

Screen 9: Conclusion and congratulations

Text: Congratulations, STEAM explorer, you don't need to wait until 2036 to unlock the unlimited potential of science, technology, engineering, art and mathematics. Introducing the 5 disciplines book, built on the passion and expertise of 5 of our 5 STEAM women. All of them were clear about their goal: to share their wisdom and experiences with future generations, leaving them collected in this book. The women you have met here are pioneers, proving that there are no limits to your dreams. Remember, every discovery, every challenge overcome, brings you closer to your goals - keep exploring! The STEAM world is exciting, and full of opportunities to create, innovate and make your mark - you are the next generation of brilliant minds! Go ahead, the future awaits you with endless possibilities! Do as they do!



With the image of the book and the final text, the virtual escape experience culminates. It can be restarted as many times as desired, offering interactive elements to ensure full accessibility and navigability. Should the teacher or facilitator wish to dwell on a specific concept or screen, the design of the virtual escape allows for a flexible and adaptable educational experience.