# Título: The Scientists' Club

**Educational level:** 6 th level 3rd Cycle Primary Education.
**Curricular Areas:** Social Sciences.
**Timing:** 2 sessions of 45' (2nd trimester).

## Summary

In this activity, students will learn about the lives and achievements of great women scientists while developing skills related to computational thinking.

The students will work in teams to research five outstanding scientists: Ada Lovelace, Marie Curie, Margarita Salas, Rosalind Franklin, and Katherine Johnson.

Based on their research, they will reinforce their learning through a board game that includes question cards designed to develop skills such as problem decomposition, pattern recognition, abstraction, and algorithms.

## Aims

- Promote logical and computational thinking among students.
- Encourage teamwork and collaboration.
- Develop research and analytical skills.
- Enhance logical thinking and organisational skills.
- Learn about important women in the field of science.

**Key competencies to develop:** Linguistic communication, competence in science, technology and engineering, personal, social, and learning to learn.

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## How do we do it ?

1. The activity will begin with a whole-class reading of the text *The Scientists' Club* (available for download below in the materials section). This will help introduce the topic and familiarise students with the five scientists.

2. Next, students will work in **small groups**. Each group **will research one of the five women** to gain a more detailed understanding of her career. Students should take note of the **most important information** and could even create a poster for each scientist.

   If devices are not available, **they can use the information cards** about the scientists (downloadable from the materials section).Additionally, **the following videos can be watched**: Ada Lovelace, Marie Curie, Margarita Salas, Rosalind Franklin, Katherine Johnson.

3. Once the research is complete, **each group will present their findings to the rest of the class**, ensuring that everyone learns the most important information about each scientist's life and achievements.

4. **The five information cards** about the scientists **will be distributed** to all small groups so they can review the key facts about each woman.

5. Finally, students will take part in a board game (downloadable from the materials section), following these instructions:

- **PLAYERS:**
  It is recommended to play in **pairs, with groups of 4 players**, that is, two against two.

- **GAME OBJECTIVE:**
  **The first pair to reach the last square will win**. To do so, they must answer the questions on the game cards correctly.

- **MATERIALS:**
  - Game board.
  - One dice.
  - Player pieces (2).
  - Question and answer cards. Each card will be assigned a colour, depending on the question category: pink for science questions; yellow for algorithms; blue for patterns; and green for debugging questions.

  Both the board and the question cards can be downloaded from the materials section.

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- **GAME PREPARATION:**

  Place the board in the centre of the table and the question cards into 4 separate piles, according to their colour. The cards should be placed so that the question side is visible, not the answer side.

- **INSTRUCTIONS:**

**1-** One of the pairs will start by **rolling the dice** and moving the number of spaces rolled. If they land on a ladder space, they can move up the board. If they land on an arrow space, they will move to the indicated space.

**2-** **The opposing pair will draw a question card corresponding to the colour of the space landed on.** The question should be read aloud so the other two players can answer. The opponents will check the answer.

**3-** If the **question is answered correctly**, **the pair will roll the dice** again and continue moving on the board. **If the answer is incorrect, they will remain on that space** and will not roll the die until their next turn.

- **END OF THE GAME:**

  The game ends when one of the pairs reaches the last space. Optionally, the other pair could be allowed to continue advancing until they reach the final space as well.

## Suggestions

- During the game, **each incorrect answer could be penalised** by requiring the players to move back to the space they were on previously.
- As an extension activity, **students could create new question cards** based on relevant information about the five women scientists.
- Additionally, students could conduct research on other **important female scientist**.

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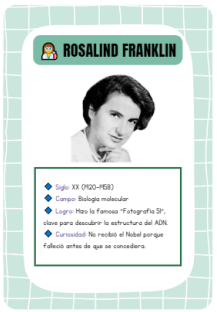
# Resources

- **Human:** teacher and students.
- **Materials:** dice, player pieces, game board, and question cards (downloadable), text and information cards (downloadable), printer, tablets/computers (optional).

**Space:** classroom.

**Type of activity:** Small group and whole class.


Text "The Scientists' Club".


Information cards


Board and question cards.

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# What have we learned?

| Assessment criteria | Excellent | Very good | Satisfactory | Needs improvement |
|---|---|---|---|---|
| **Understanding of the topic** | Demonstrates a deep knowledge of the scientists, their work, and their impact. | Knows the scientists and their work, although some details may be imprecise. | Has a general idea, but with incomplete or imprecise information. . | Shows difficulties in explaining the importance of the scientists. |
| **Active participation** | Collaborates enthusiastically in all activities and contributes original ideas. | Participates actively in most activities. | Participates occasionally, but without much enthusiasm. | Barely participates or shows little interest. |
| **Teamwork** | Communicates effectively, respects the opinions of others, and collaborates equitably. | Works well in a team, although sometimes struggles to listen to others. | Collaborates with the group, but has difficulties in communication . | Does not cooperate or has constant conflicts with the group. |
| **Use of language.** | Uses precise and appropriate vocabulary for the topic. | Uses appropriate vocabulary, although with some inaccuracies. | Explains ideas simply, but with errors or lack of clarity. | Has difficulty expressing their ideas on the topic. |

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# Computacional thinking

**Logic (prediction and analysis):** thinking to make predictions, solve problems and make decisions based on available information.

**Algorithms (steps and rules):** following a set of well-defined steps or instructions to solve a problem or complete a task.

**Decomposition (breaking down into smaller parts):** breaking down problems into smaller and more manageable parts, which are easier to understand and solve.

**Patterns (detecting and using similarities):** identifying similarities or patterns in problems or data, which helps find quicker and more efficient solutions.

**Abstraction (delete unnecessary details):** simplifying things in a problem hiding unnecessary details or aspects to focus on those which are relevant and essential.

# More information

**QR codes to the activity resources:**

Text “The Scientist club”

Information cards

Board and question cards

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