The research project titled "What shapes students' STEM preferences? The role of creativity and gender stereotypes" is a fascinating journey into discovering why we either love or hate STEM! Have you ever wondered why, despite equal mathematical abilities in girls and boys, so few young women choose an educational path related to the sciences? The answer to this question lies at the heart of this project. The study focuses on the role that teachers, parents, and the school environment play in shaping students' interest in the sciences. The project attempts to understand how teachers, through their beliefs, teaching methods, and interactions with students, influence their educational decisions, particularly in the context of gender. It also examines how gender stereotypes and creativity in teaching mathematics can change students' approach to the sciences. An interesting aspect of this study is the application of a multi-level analysis, which considers not only student characteristics but also the specific influence of teachers and peers. The project aims to delve into the key factors influencing students' educational preferences related to STEM, focusing on the characteristics of teachers and students, creativity, and gender stereotypes, considering family background and school context.
The planned study consists of three stages, which together provide a comprehensive understanding of the phenomenon being studied:

1. Survey and Testing: The first stage involves conducting research among students and teachers. This part of the study allows for the collection of numerical data on attitudes, experiences, and preferences in the field of the sciences. This enables objective analysis and identification of general trends and patterns.
2. Observations of Mathematics Lessons: The second stage includes direct observations in the school environment. This allows for an understanding of how mathematics teaching is implemented in practice, how teachers and students interact with each other, and how these interactions can influence students' interest in the sciences.
3. Interviews with Students: The final stage involves conducting in-depth interviews with students. This aspect of the study allows for a thorough understanding of individual perspectives, experiences, and opinions of students about the sciences and factors influencing their educational decisions.

This study is extremely important, as history shows that girls have been perceived as less competent in mathematics for years. However, recent studies show that there are no significant differences in mathematical abilities between genders. We are therefore trying to understand why, despite this, women are still underrepresented in the scientific fields.

In summary, this project has the potential for a deep understanding of the dynamics shaping the educational decisions of young people, especially girls, in the field of sciences. This could be key to breaking down barriers and gender stereotypes, opening the door to greater equality and diversity in STEM fields. This fascinating study could change the way we think about education and the role that teachers play in shaping the future of our children.