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AMAZE SPACE CAMP: A GATEWAY TO SPACE EXPLORATION AND STEAM EDUCATION FOR HIGH SCHOOL STUDENTS IN MOROCCO THROUGH IMMERSIVE OUTREACH

Abstract

The Astronaut Mission Adventure Zone (**AMAZE**) Space Camp is a groundbreaking seven-day program that immersed 30 Moroccan high school students aged 15 to 18, selected based on merit from diverse cities and villages across the country, in the captivating world of space exploration, science, and technology. Organized by the **Moroccan Initiative for Space Industry** (MISI) in August 2023, AMAZE draws on the invaluable experience gained through the RACE2SPACE contest, which provided Moroccan students with the opportunity to attend Space Camp located in Huntsville, Alabama, associated with the U.S. Space Rocket Center. By adapting the event to the local context, AMAZE offers participants a truly unique and transformative learning experience that ignites their passion for space exploration while remaining rooted in the Moroccan setting.

AMAZE employs an integrated **TEAMS** approach (Technology, Engineering, Art, Mathematics, Science, and Teamwork), leveraging its trainers' expertise to stimulate curiosity, develop leadership skills, and foster inclusion. The program's innovative chaperoning method ensures personalized attention and creates a supportive learning environment. The selection process for the camp, which is offered to participants free of charge, included rigorous astronaut-style tests to identify the most deserving candidates.

The camp's comprehensive curriculum includes hands-on experiences such as designing and launching water and solid fuel rockets, virtual reality simulations of the International Space Station, and airplane piloting training. The highlight of the camp is the Mars Analog Mission, a simulation in which participants collaborate to build a sustainable human settlement on Mars while addressing environmental challenges

inspired by the local milieu. AMAZE also offers participatory programs like astrobiology workshops, rover programming challenges, space-themed art projects, and more, encouraging an interdisciplinary approach.

By giving access to cutting-edge tools and expert training, AMAZE hopes to inspire the next generation of space leaders and innovators while demonstrating the low-hanging fruit of the space field. To measure the impact of the program, extensive data was collected through self-assessments completed by students before and after the sessions and the camp, as well as evaluations from trainers and an external education consultant.

AMAZE Space Camp is a transformative occasion that instills a lifelong passion for space and STEAM in Moroccan adolescents. The program's unique blend of immersive simulations, hands-on activities, and expert-led workshops empowers participants to dream big, push boundaries, and become the future leaders of the space industry, thereby driving scientific progress and international cooperation in this exciting and rapidly changing field.