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Best Practices Guidelines: Girls in STEM: Hands-On Exploration for Future Innovators

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- **Best Practice Title:** “Girls in STEM: Hands-On Exploration for Future Innovators”
- **Language:** English
- **Content Type:** In-school Activity
- **Teaching Activity:** All-Day STEM Workshops
- **Target Audience:** All students, with a focus on female students
- **Discrimination Grounds:** Gender, sexual orientation, transgender, age, race, ethnic origins, ableism, class
- **Teaser:** Dive into hands-on STEM workshops, all guided by inspiring women mentors, and discover your inner innovator!

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- **Purpose:** To empower and inspire female students by providing hands-on STEM experiences guided by female mentors

- **Goals:** Increase interest in STEM fields, highlight current gender disparities in STEM fields, break down stereotypes, explain the benefits of increased female participation in STEM, provide role models, and emphasize the potential of girls to become future leaders in STEM

These guidelines were created to help you organise your own “Girls in STEM: Hands-On Exploration for Future Innovators” all-day event in your schools. Get all the tips and steps to make this event successful and give an inspiring day to your students!

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Activity / Guidelines Overview

- Organise hands-on workshops and activities where students can engage in STEM-related projects and experiments under the guidance of female mentors, in order to educate all the students of your school and to empower and inspire the female students.

- Invite female mentors who are experts in STEM fields to guide the students during the workshops/activities. These mentors should possess relevant expertise and experience in areas such as science, computer science, engineering, and robotics.

- Develop engaging and interactive all-day workshops/activities, in collaboration with the invited mentors, that allow students to actively participate and learn. Consider incorporating programming exercises, scientific experiments, engineering design projects, and robotics demonstrations.

- Following the event, establish mechanisms for evaluating its effectiveness and collecting feedback from the participants. Use this feedback to identify areas for improvement and refine future workshop initiatives.

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Planning the Event

Initial Steps:

- Form an organising committee
- Define the event objectives and goals
- Schedule the date and find a secure venue within the school

Materials Needed:

- STEM kits and tools
- Laptops / Computers
- Projectors and presentation materials

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Selecting Female Mentors

- **Criteria:** Experts in STEM fields such as science, engineering, and robotics
- **Roles:** Mentors will guide workshops, share experiences, and inspire students
- **Outreach:** Contact local universities, tech companies, and STEM organisations for potential mentors

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Workshop Design

Activity Ideas:

- Programming Exercises: Coding basics, app development
- Scientific Experiments: Hands-on experiments in biology, chemistry, or physics
- Engineering Projects: Building models or solving engineering challenges
- Robotics Demonstrations: Programming and operating robots

Include interactive elements and ensure all activities are engaging and encourage student participation

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Detailed Schedule

Morning Session:

- Welcome and Introduction
- Keynote Speech by a Female STEM Leader
- First Workshop Session

Break (Networking and/or Mentor Q&A)

Afternoon Session:

- Second Workshop Session
- Group Activities / Competitions
- Closing Remarks / Awards

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Promotion and Outreach

- School announcements and newsletters
- Social Media campaigns
- Flyers and posters around the school
- Registration: Set up a registration system for students to sign up

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Event Day Logistics

- **Setup:** Ensure all equipment and materials are in place
- **Volunteers:** Recruit and train volunteers to assist with workshops and logistics
- **Accessibility:** Make sure the venue is accessible to all students

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Post-Event Evaluation

Feedback Collection:

- Surveys for students and mentors
- Group discussions

Evaluation Criteria:

- Student engagement and interest
- Effectiveness of workshops
- Overall satisfaction

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Improvement, Follow-Up, and Sustainability

- **Analyse Feedback:** Identify strengths and areas for improvement
- **Plan Future Events:** Use feedback to refine and plan future STEM workshops - Encourage more schools to take the initiative and organise their own “Girls in STEM” events
- **Continuous Engagement:** Keep students with follow-up activities and resources

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