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Future Female Innovators In STEAM

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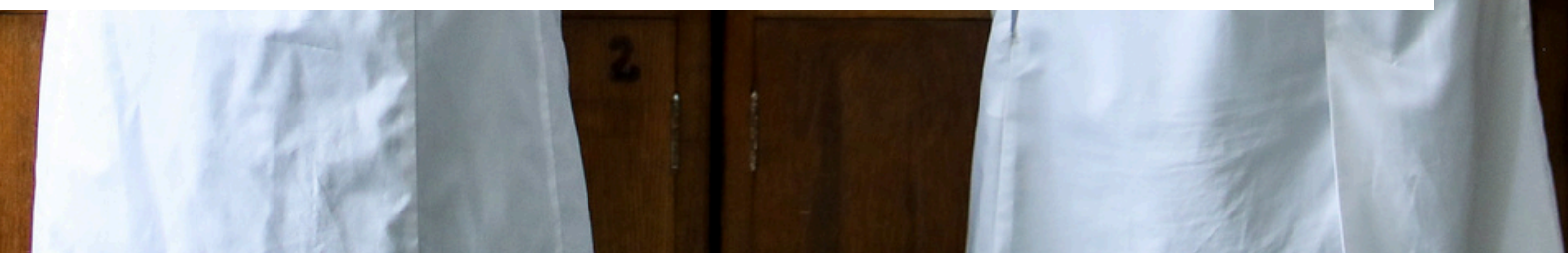
Hands-on STEAM Skill Development

This activity gives mentees the opportunity to try new STEAM activities, helping them develop confidence and practical skills in a fun, engaging way.



Process:

1. Preparation (Before the Session)

Set the Focus:

- Identify which STEAM skill(s) the session will focus on (e.g., coding, robotics, data analysis).
- Align the activity with the mentee's interests or skills they want to explore.
- Gather Materials:
- Collect all necessary tools (e.g., laptops, robotics kits, art supplies, software).
- Test technology before the session to avoid interruptions.
- Choose an Activity:
- Select a hands-on STEAM project that introduces a new skill in a fun, practical way.

Example activities:

  - Build and program a simple robot (LEGO Mindstorms, Arduino).
  - Create a 3D model (TinkerCAD).
  - Conduct a science experiment (e.g., testing water pH).
  - Design geometric art using math principles.

2. Welcome and Introduction (5-10 min)

- Start with a friendly chat to create a relaxed atmosphere.
- Explain the Goal:
  - Example: "Today, we'll be exploring [STEAM skill] through a fun hands-on activity!"
- Remind them that trial and error is part of learning—mistakes are welcome!

3. Introduction to the Activity (10-15 min)

- Provide a simple overview of what they'll do.
  - Example: "We'll program this robot to follow a line using its sensors."
- Show a quick example or demo.
- Allow time for questions before they start.

4. Hands-On STEAM Activity (30-45 min)

Engage in the Task:

- Let the mentee take the lead while you support them as needed.
- Encourage problem-solving and experimentation.

Encourage Exploration:

- Ask open-ended questions:
  - "What happens if we change this code?"
  - "Can we improve this design?"

Troubleshoot Challenges:

- Help them work through obstacles without giving direct solutions.

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Process:

5. Showcase and Discuss Results (10-15 min)

Celebrate Their Work:

- Acknowledge effort, creativity, and problem-solving, not just success.
    - Example: "You built and programmed a robot—how does that feel?"

Ask:

- "What did you enjoy the most?"
- "What was challenging?"
- "Would you like to explore this further?"

Tie to STEAM Careers:

- Connect the activity to real-world applications.
    - Example: "Engineers use sensors like these in self-driving cars!"

6. Wrap-Up and Next Steps (5-10 min)

Summarize Key Learnings:

- Example: "You learned how to program sensors—an important robotics skill!"

Suggest Future Activities:

- Example: "Next time, we could design a maze for the robot to navigate."

Encourage Practice:

- Share tutorials, kits, or online resources so they can continue learning.

7. Post-Session Follow-Up

- Record what went well, challenges faced, and mentee reflections.
- Choose follow-up activities based on their interests.
- Send constructive feedback and encouragement via email or a shared platform.

Reflection Questions:

- What was the most exciting part of the activity?
- What skills do you want to explore further?
- How does this skill relate to real-world STEAM careers?

By completing this activity, mentees gain hands-on experience, build confidence, and discover new STEAM interests, making learning both engaging and meaningful!

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