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She in STEM

Presented by the Executive team

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Session plan

1

Highlight Notable Achievements:

Celebrate the contributions of successful women in STEM and their groundbreaking innovations.

2

Address Challenges:

Explore the gender biases, stereotypes, and workplace challenges women face in STEM fields.

3

Share Strategies for Success:

Provide practical tips for building confidence, developing technical skills, and achieving a healthy work-life balance.

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Notable Achievements

Rosalind Franklin 🧬 ☠️ 🦠

- Made critical contributions to understanding the molecular structures of DNA, RNA, viruses...
- Her X-ray diffraction images of DNA led to the discovery of the DNA double helix by Watson and Crick.

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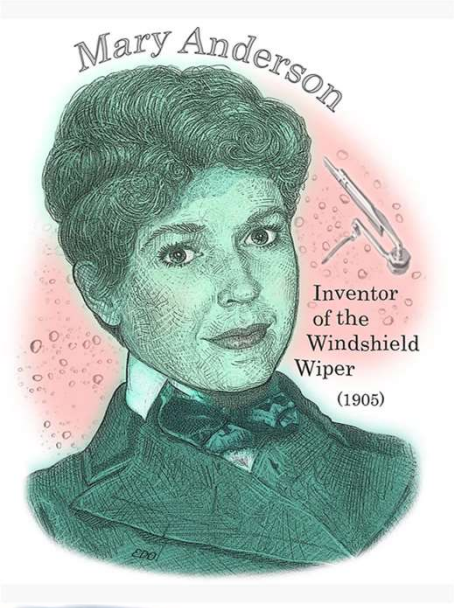
Notable Achievements



Mary Anderson 🚗 ☔

- Invented the first effective windshield wiper
- Her invention became a standard feature in automobiles, significantly improving driving safety, especially in adverse weather conditions.

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Game Time!

Guess The Pioneer 👩🏽‍🚀 🚀 📐 !!

- Match the group of emojis with the correct well-accomplished woman.

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First group

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Answer

Mae Jemison

- First African American woman to travel to space, aboard the Space Shuttle Endeavour in 1992.
- A physician and engineer, she worked as a general practitioner and participated in medical research before joining NASA.

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Second group

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Answer

Marie Curie 🏆 *2 ☢ 🔬 🇵🇱

- First woman to win a Nobel Prize and the only person to win Nobel Prizes in two different scientific fields (Physics and Chemistry).
- Pioneered research on radioactivity, discovering the elements polonium and radium.

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Third group

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Answer

Grace Hopper

- Developed the first compiler for a computer programming language and was instrumental in the creation of COBOL, one of the earliest high-level programming languages.
- Her work made programming more accessible, laying the groundwork for software development as we know it today.

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Gender Bias and Stereotypes in STEM fields

- Women are Less Technical
- Women as Better Communicators
- STEM is for Men

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Real-World Challenges

1

Underrepresentation in STEM:

Women make up only about 28% of the STEM workforce in the U.S. (National Girls Collaborative Project, 2022).

2

Hiring Bias:

A study found that female students with identical qualifications as male students were less likely to be hired for a lab manager position (Moss-Racusin et al., 2012).

3

Leaving STEM Jobs:

Women in STEM fields are more likely to leave their jobs due to gender bias and lack of mentorship (Fouad et al., 2016).

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Case Study: Dr. Jocelyn Bell Burnell (Astrophysicist)

- Discovered pulsars in 1967 but was overlooked for the Nobel Prize, which was awarded to her male colleagues. This reflected the bias that women's contributions in STEM were less valued.
- Dr. Bell Burnell continued her work and advocacy for women in science, using her platform to address gender bias.
- In 2018, she was awarded the Special Breakthrough Prize in Fundamental Physics, and she donated the prize money to support women and minority students in physics.

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- **Underrepresentation in Leadership:** Women hold only about 15% of engineering and architecture management roles globally (Catalyst, 2020).
- **Wage Gaps:** Women in STEM earn, on average, about 85% of what their male counterparts earn (U.S. Department of Commerce, 2017).
- **Workplace Discrimination:** 50% of women in STEM report experiencing some form of discrimination, compared to 41% of men (Funk et al., 2018).

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Workplace Challenges and Environment for Women in STEM

Women in STEM face a range of challenges that impact their career advancement and overall experience in the workplace. These challenges include underrepresentation in the field, difficulties balancing work and personal life, and limited access to mentorship opportunities.

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- Representation of women in STEM fields is significantly lower compared to their male counterparts. This underrepresentation can result in a lack of diversity in perspectives and ideas, which can affect innovation and workplace culture.
- Only 28% of the STEM workforce is made up of women, and in some areas like engineering, women make up less than 15% of the workforce (National Science Foundation, 2019).

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- Many women in STEM struggle with maintaining a balance between their demanding careers and personal or family responsibilities.
- In 2021, 36% of women in STEM reported experiencing difficulties in balancing work and family life, which has contributed to higher attrition rates compared to their male counterparts (Pew Research Center, 2021).

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- ·Access to mentors can provide valuable guidance, support, and networking opportunities, helping women navigate the challenges of their careers. However, many women face barriers to finding and securing effective mentorship.
- ·Women who have had a mentor are 44% more likely to stay in STEM careers than those without one. However, only 16% of women in STEM have access to formal mentoring programs (National Academy of Sciences, 2019).

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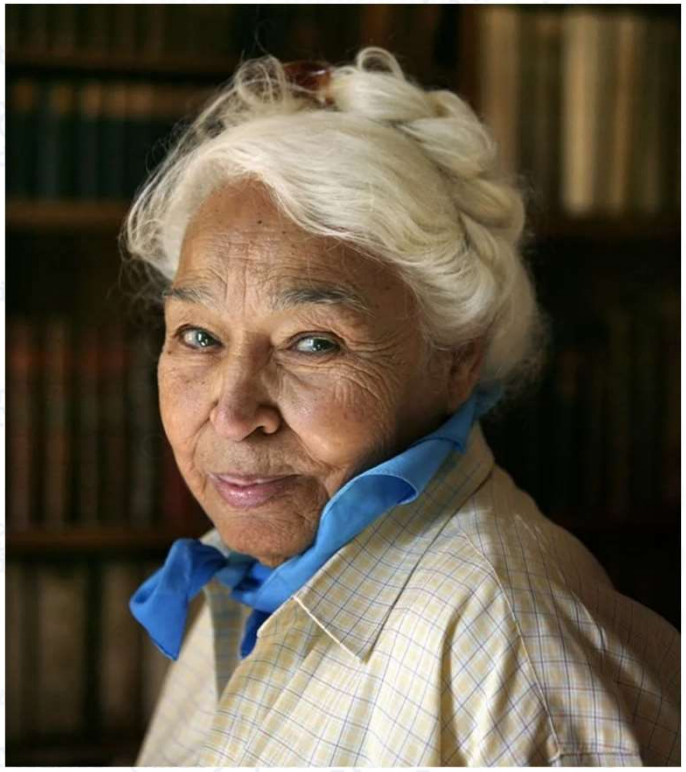
Examples of Women Leaders

Dr. Nawal El Saadawi

·**Position:** Physician, Psychiatrist, and Author.

·**Contributions:** Dr. Nawal El Saadawi, although more widely known as a feminist and writer, was also a trained physician who worked in public health. She used her medical background to advocate for women's rights, particularly in the areas of reproductive health and gender equality.



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Examples of Women Leaders

Dr. Katie Bouman

·**Position:** Assistant Professor of Computing and Mathematical Sciences, California Institute of Technology (Caltech).

·**Contributions:** Dr. Katie Bouman led the development of an algorithm that helped produce the first-ever image of a black hole, a groundbreaking achievement in astrophysics.

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Confidence building

Surround yourself with positive influences

Engage in continuous learning and skill development

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Confidence building

- **Set clear and achievable goals**, you can use the SMART Framework to make sure you're setting Specific, Measurable, Achievable, Relevant, and Time-bound goals.
- **Celebrate small wins**, acknowledge progress and reward yourself when reaching specific milestones

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Confidence building

Seek feedback and learn from mistakes

Practice assertiveness

Build a positive body image

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Confidence & Skill Development

- Importance -

- **Strong technical skills** are fundamental for innovation and problem-solving in STEM fields.
- **Confidence** empowers individuals like yourselves to tackle challenges, collaborate effectively, and become leaders.

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TIPS & TRICKS

- Skills -

Experiment with various fields (e.g., coding, robotics) to find your passion

Participate in science fairs, hackathons, and other STEM competitions

Stay curious and open to new knowledge and experiences in STEM

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TIPS & TRICKS

- Learning -

Consider platforms like **Coursera**, **edX**, **and Udacity** for high-quality courses

Research certifications that can enhance your knowledge (e.g., **Microsoft**, **Cisco**, **Google certifications**)

Leverage free online tutorials and platforms like **Khan Academy** and **Codecademy**.

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TIPS & TRICKS

- Social Media -

Follow STEM-related news websites, blogs, and journals

Network with professionals and peers to exchange knowledge and ideas

Follow STEM influencers and educators on social media for tips and inspiration

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- **Importance of Networking:**
  - Expands opportunities for collaboration and career growth.
  - Helps to stay informed about industry trends and innovations.

- **Finding Mentors and Role Models:**
  - Identify Potential Mentors: Look for leaders in your field who align with your career goals.
  - Approach with Purpose: Be clear about what you seek to learn and how you can contribute.
  - Leverage Platforms: Use LinkedIn, professional organizations, and networking events to connect.

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How can AGC help?

Our Events

Let's connect, get to know each other today, and build lasting friendships!

BITS & BYTES

Through our newsletter, discover opportunities, quotes and more!

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Achieving a healthy work-life balance is essential for:

- Mental and physical health
- Satisfaction
- Feeling fulfilled and productive
- Enhanced creativity and innovation
- Personal Growth

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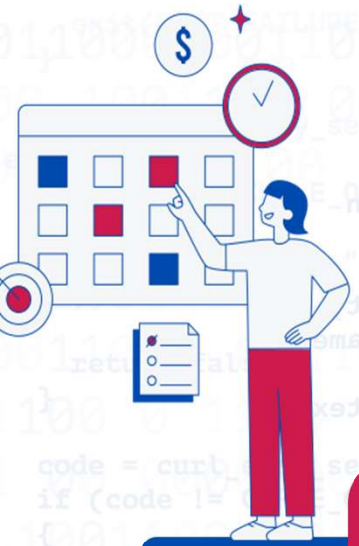

Master Your Time

1

Prioritize Tasks

Focus on important and urgent tasks first. Delegate when possible.

2

Eliminate Distractions

Create a focused work environment and minimize interruptions.

3

Time Blocking

Allocate specific time blocks for school/work, personal life, and breaks.

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Own Your Time

Pomodoro Technique

Work in focused 25-minute intervals followed by a short break

Eat the Frog

Tackle the most challenging task first thing in the morning

Benefits: Boosts productivity, reduces procrastination, and provides a sense of accomplishment

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Self-Care Routine

1

Prioritize yourself

Make time for activities that relax you, such as hobbies, meditation, or spending time in nature.

2

Learn to Say No

It's okay to decline additional responsibilities when you're already overwhelmed.

3

Sufficient Sleep

Aim for 7-9 hours of quality sleep each night.

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- **Recap of Key Points:**
  - Highlighted achievements of women in STEM.
  - Discussed challenges and strategies to overcome them.
  - Shared tips on building confidence, skill development, and work-life balance..

- **Inspiring Quotes:**
  - "The most effective way to do it, is to do it." – Amelia Earhart
  - "I was taught that the way of progress was neither swift nor easy." – Marie Curie
  - "Science and everyday life cannot and should not be separated." – Rosalind Franklin