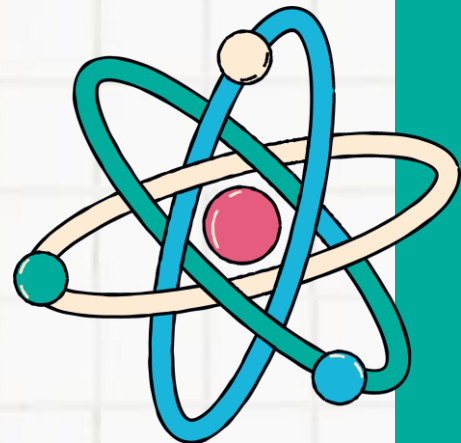
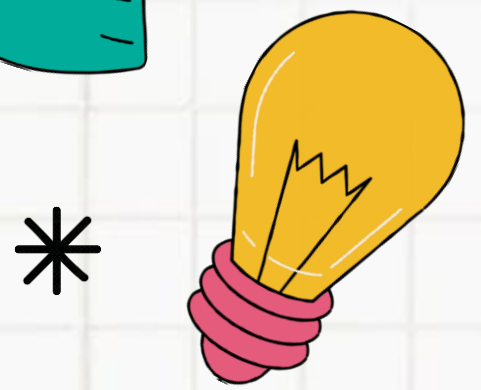
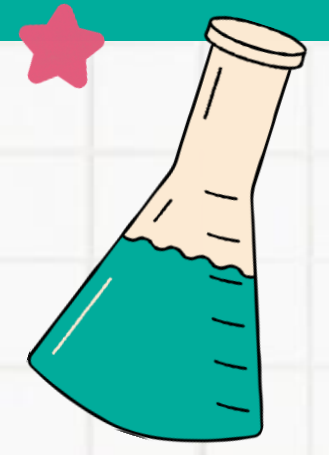
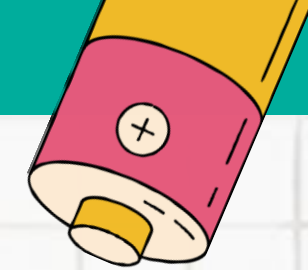
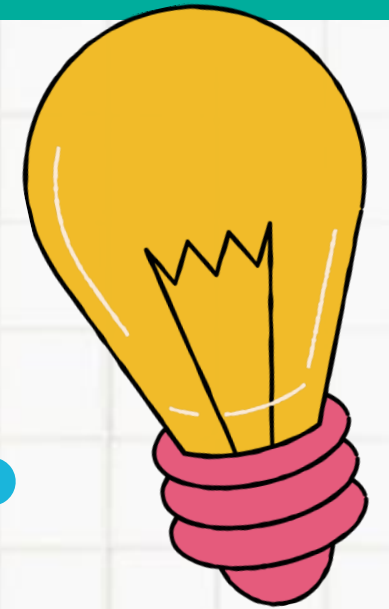
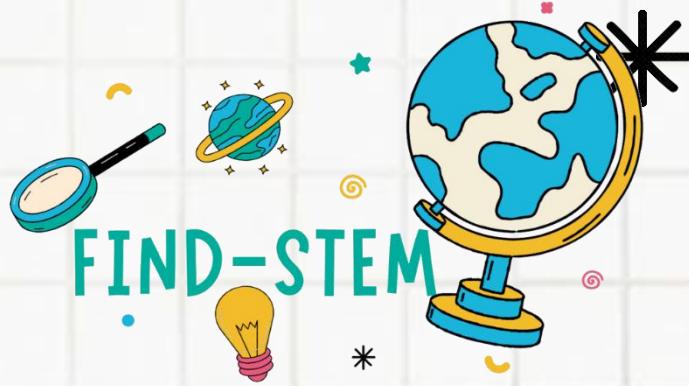


MODULE 5:

ADDRESSING GENDER

EQUALITY AND INCLUSIVITY

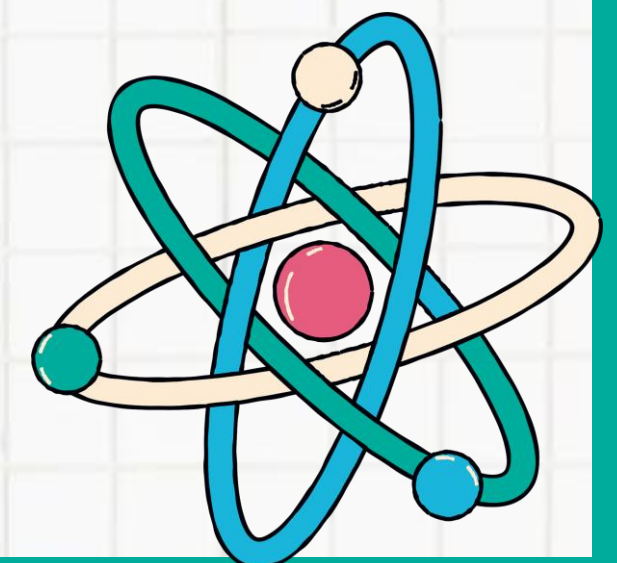


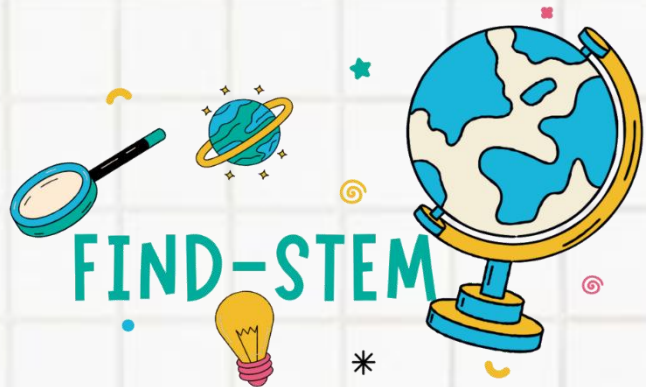


INTRODUCTION

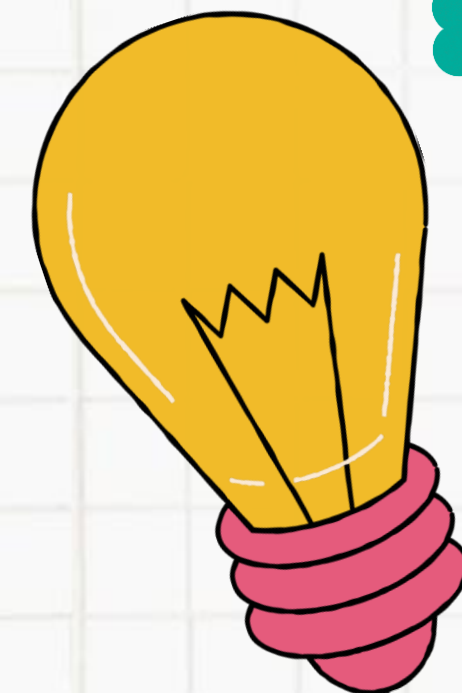
This module aims to create a more inclusive and equitable STEM learning environment.

In this module you will explore strategies to encourage girls' interest in STEM, integrate emotional intelligence, and promote self-expression while ensuring a safe and diverse classroom atmosphere.





KEY TOPICS



01

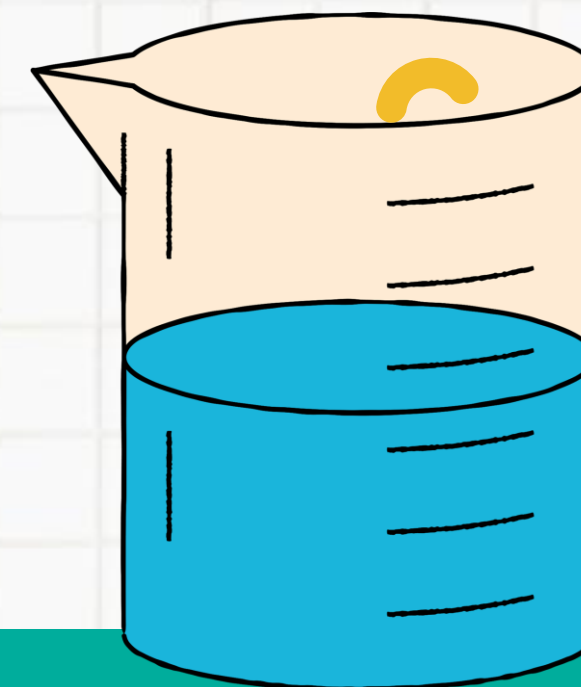
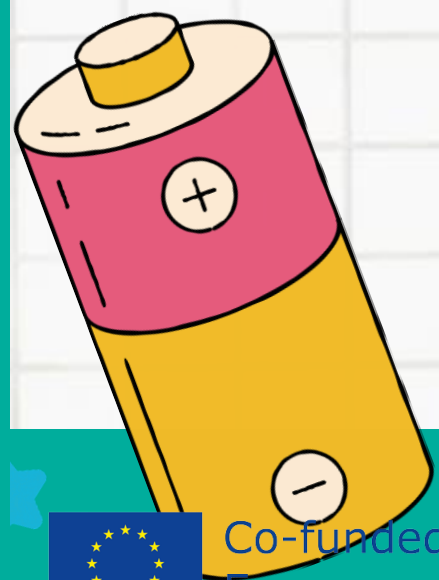
Encouraging girls' interest in STEM through interactive activities.

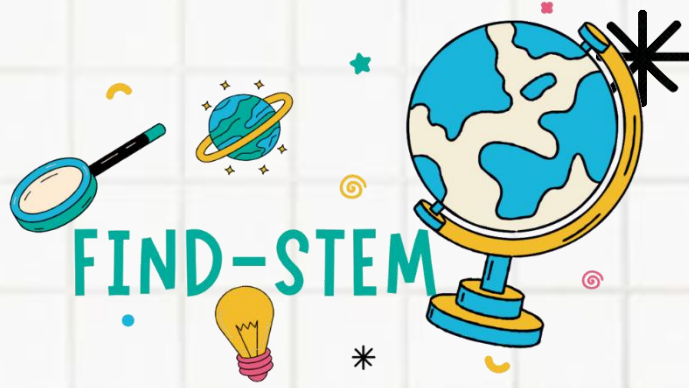
02

Integrating emotional intelligence and self-expression in STEM teaching

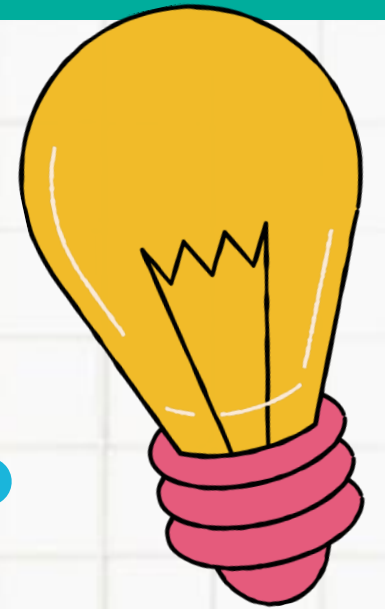
03

Strategies for creating a safe and inclusive classroom environment

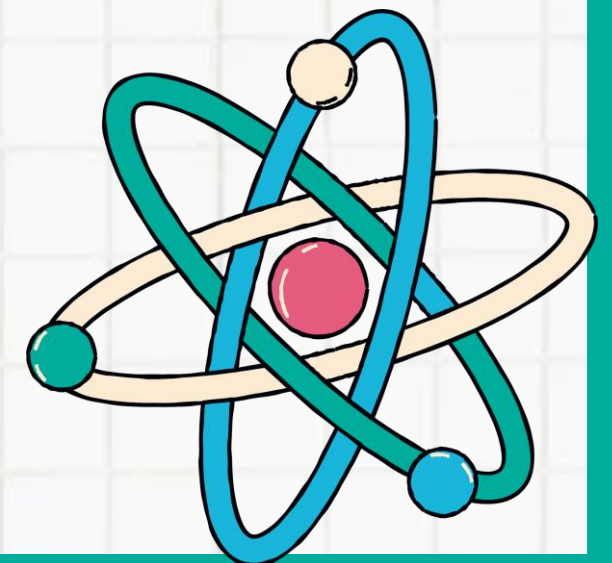


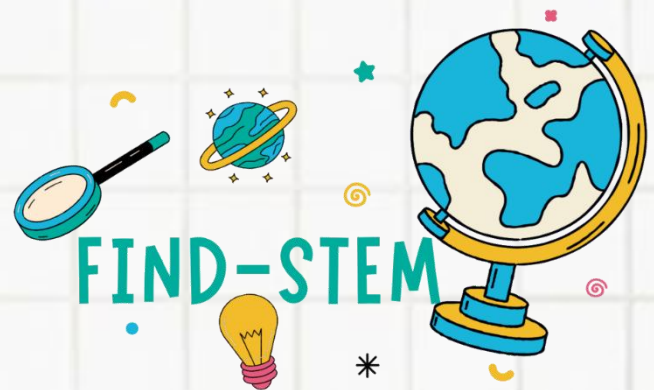


GENERAL LEARNING OUTCOMES



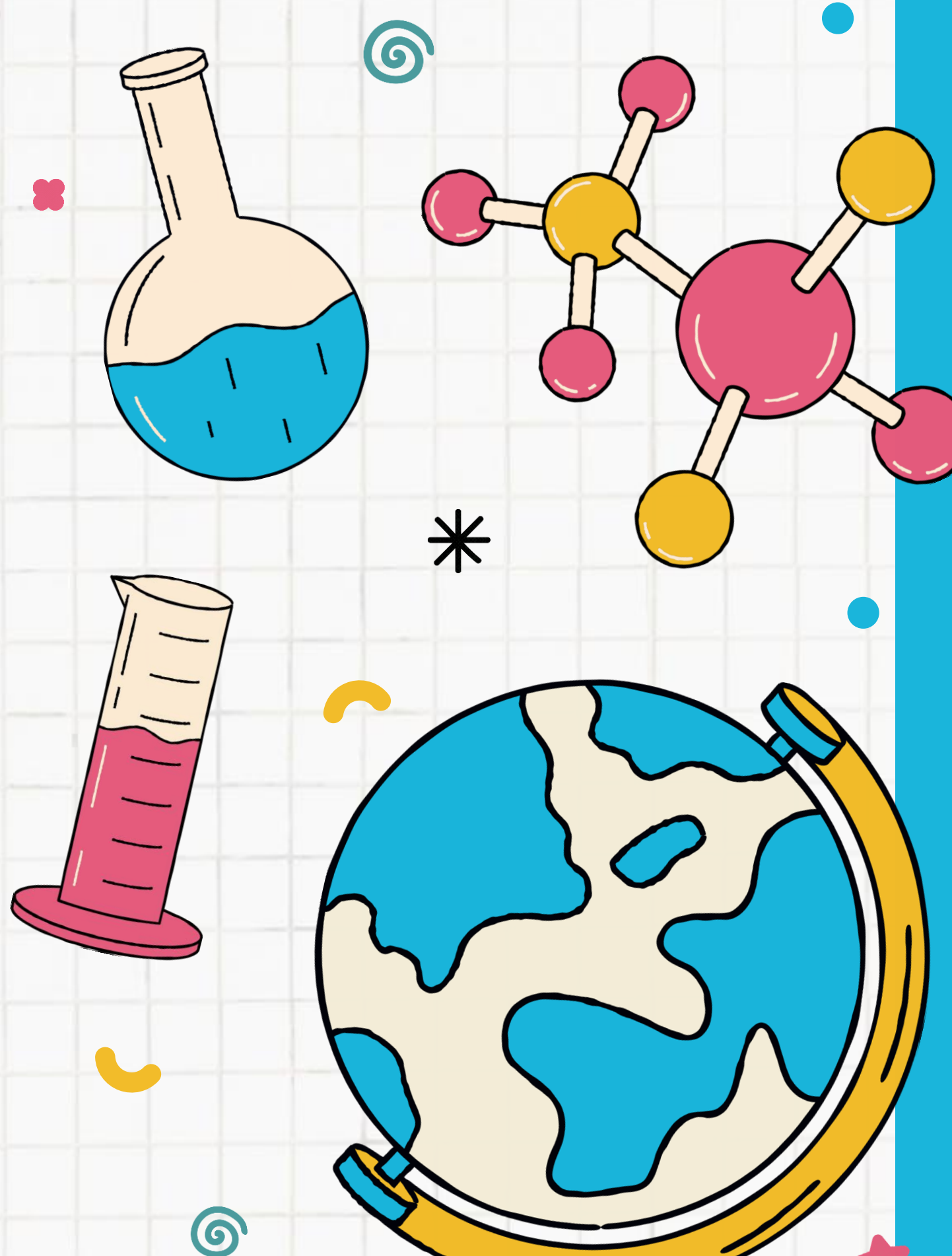
- Develop strategies to encourage girls' participation and interest in STEM through role models, mentorship, and engaging activities.
- Incorporate emotional intelligence and self-expression in STEM teaching to create a more inclusive and supportive learning environment.
- Implement classroom practices that promote gender equality, diversity, and inclusivity, addressing stereotypes and biases.
- Foster a safe and welcoming STEM learning environment that supports all students, regardless of gender or background.

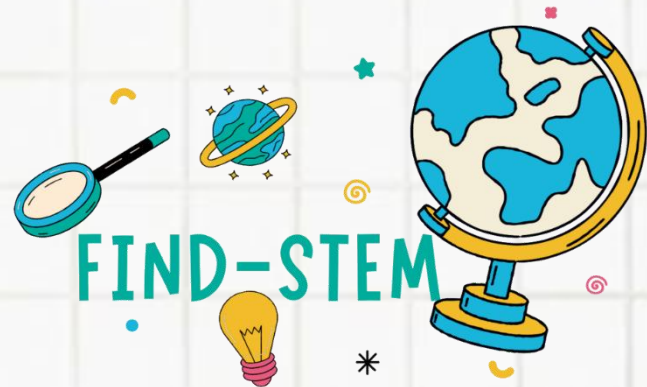




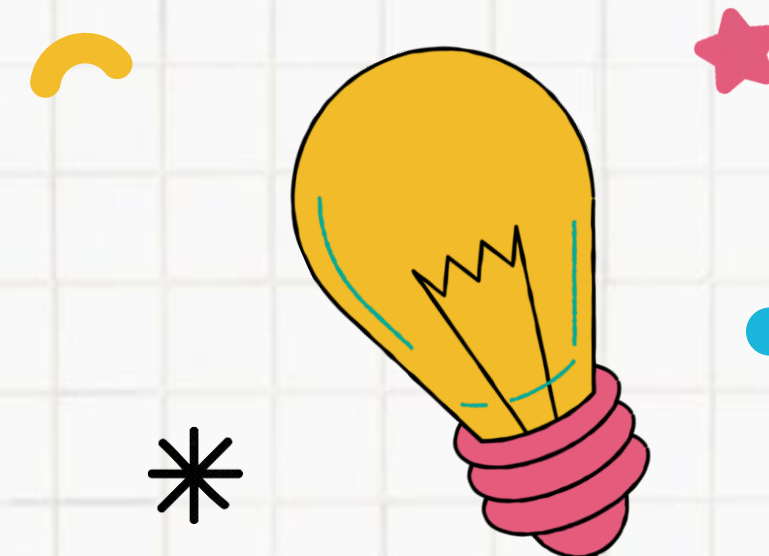
ACTIVITY 1

Role Models in STEM





OBJECTIVES



1

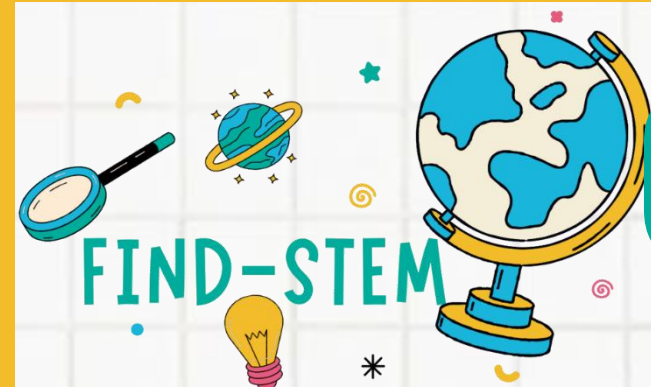
Identify diverse role models in STEM.

2

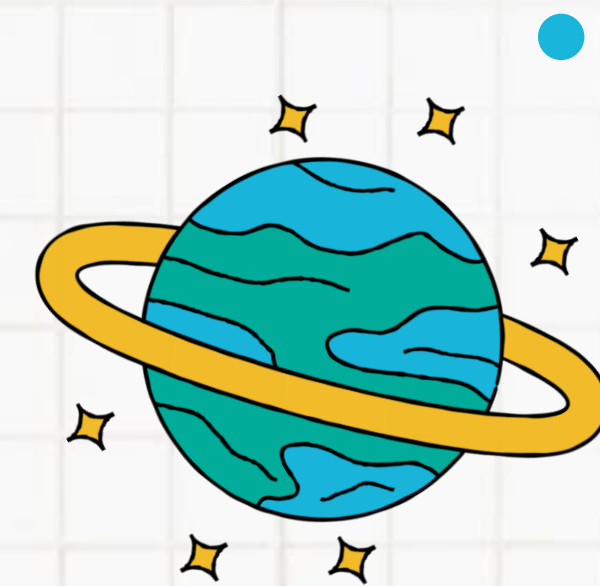
Understand how representation shapes aspirations.

3

Learn to integrate role model narratives into classroom practice.

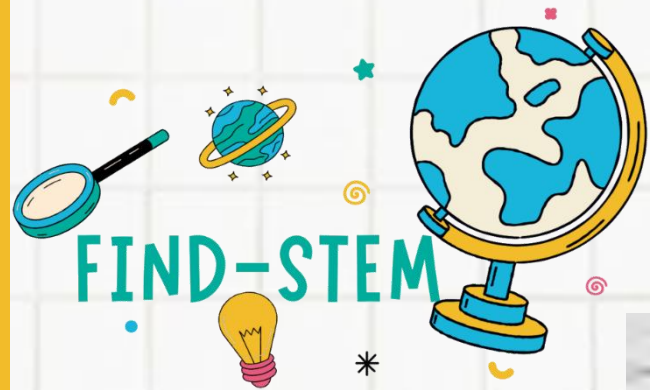


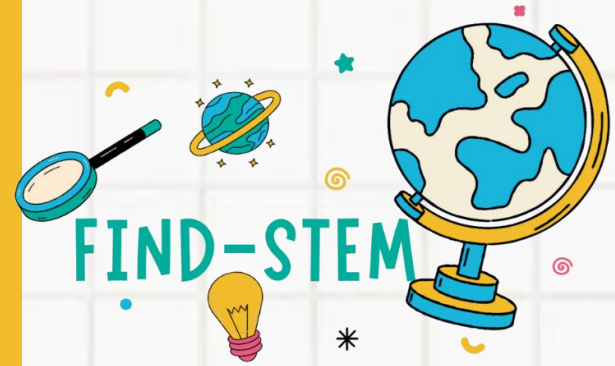
GENDER EQUALITY AND INCLUSIVITY IN STEM



Gender equity and inclusivity in STEM education refer to the equal and respectful treatment of all students, regardless of gender, background, ability, or identity, in science, technology, engineering, and mathematics classrooms. While there has been progress, significant disparities in STEM participation and achievement remain, especially for girls and underrepresented groups.





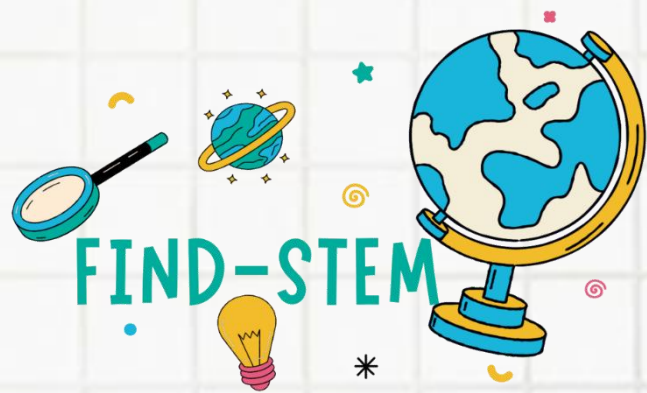


ENCOURAGING GIRLS' INTEREST IN STEM THROUGH INTERACTIVE ACTIVITIES

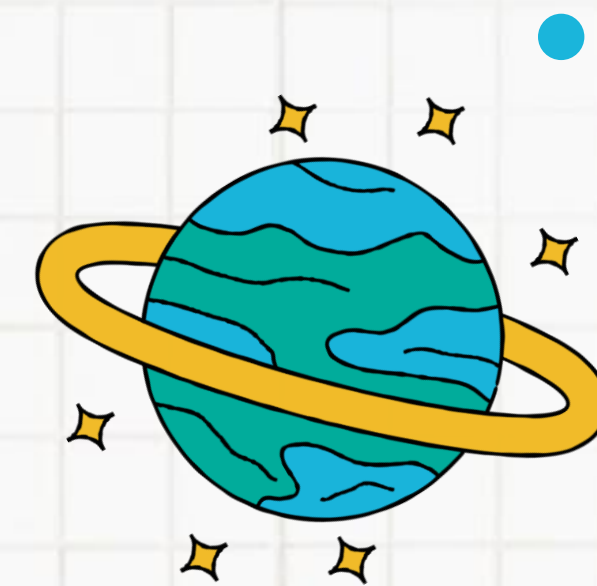


Sparking girls' interest in STEM requires certain strategies that address both the lack of representation as well as the stereotypes that seem to accompany these fields.





WHO INSPIRES YOU?



Challenge: In small groups choose one role model in STEM education

Instructions:

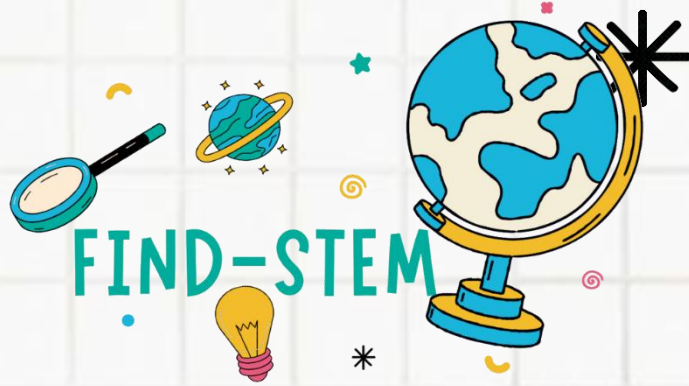
- Create a short presentation including background, key contributions, challenges overcome, and how their story could inspire students.

What common traits emerged across these role models?

How can we ensure such stories are part of everyday STEM instruction?

How might representation impact students differently depending on gender or background?

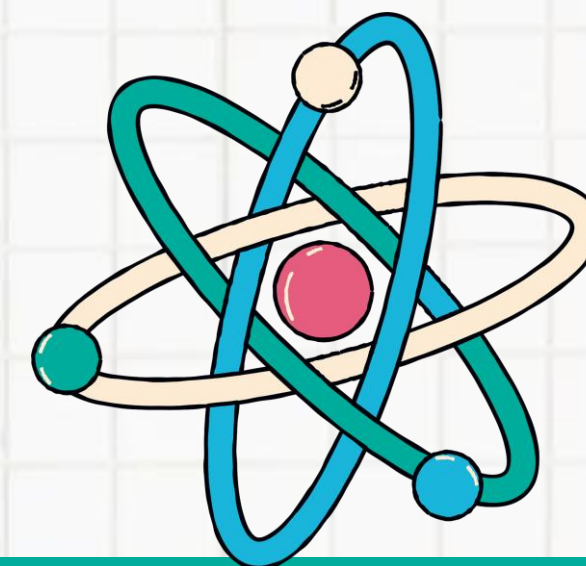




Additional Resources

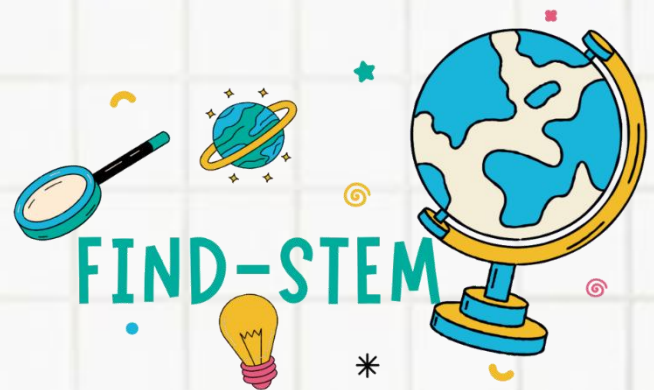
UNESCO Resource Guide:

<https://unesdoc.unesco.org/ark:/48223/pf0000372310>



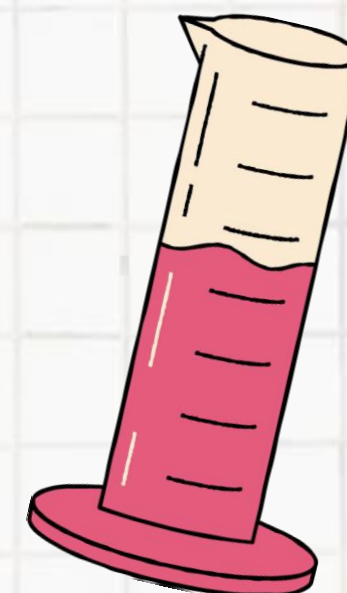
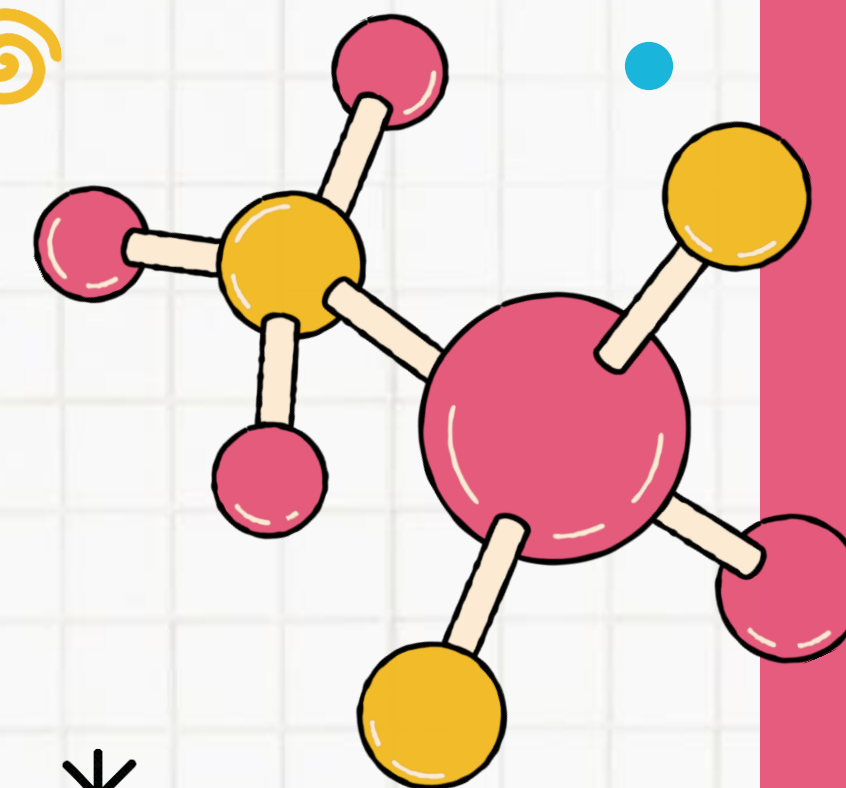
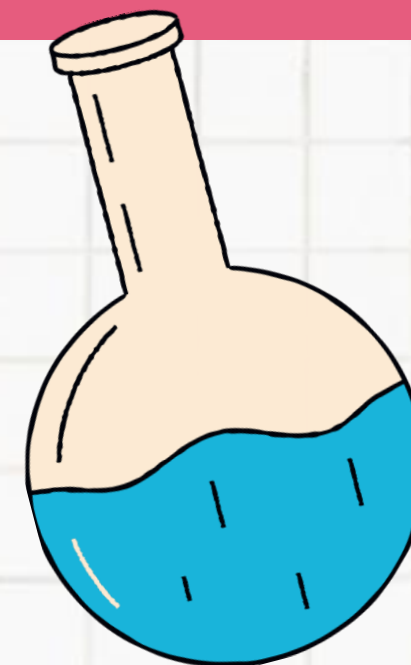
Co-funded by the
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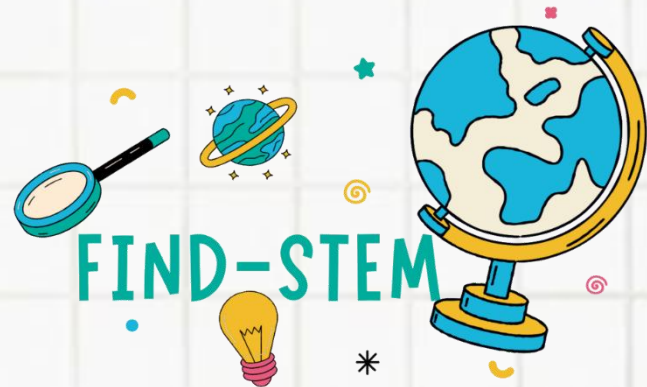
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the National Agency. Neither the European Union nor the National Agency can be held responsible for them. Ref. no. 2024-1-EL01-KA210-SCH-000249907



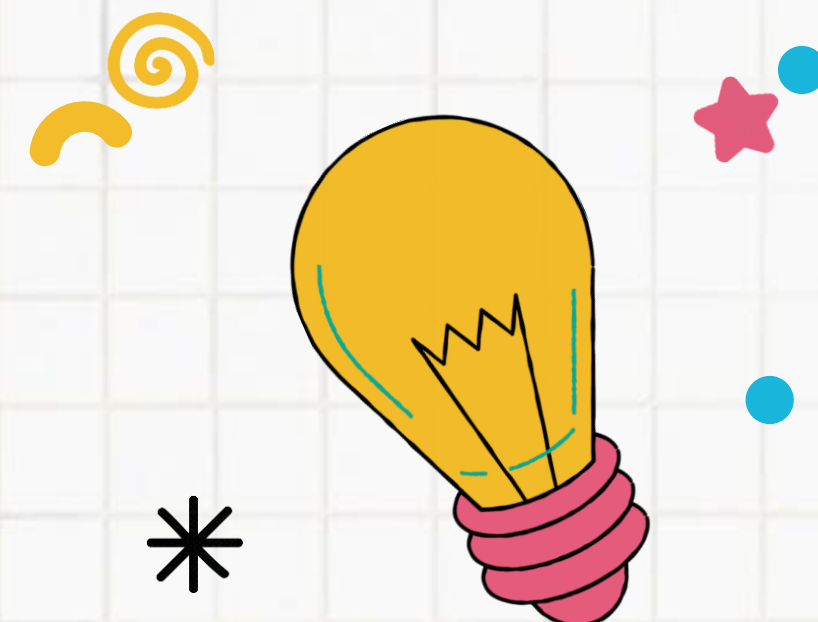
ACTIVITY 2

Emotional intelligence in stem





OBJECTIVES



1

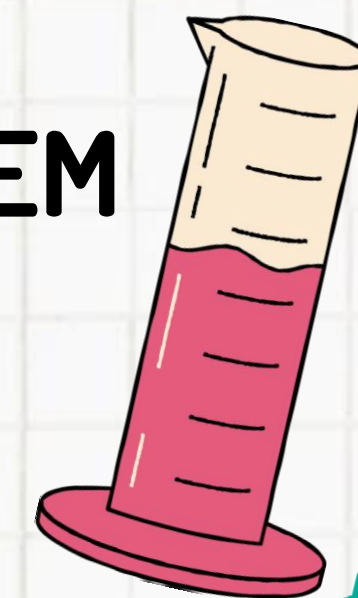
Learn how to incorporate emotional intelligence in STEM activities.

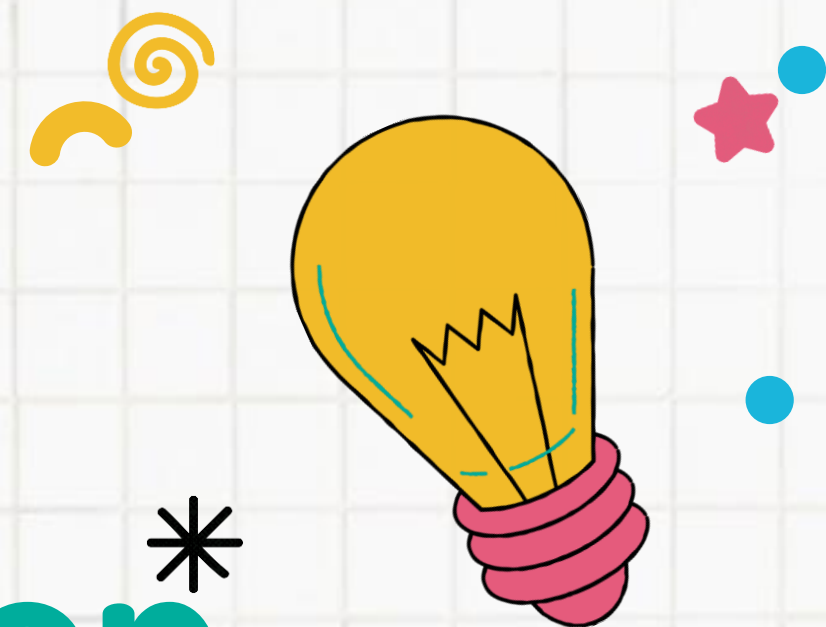
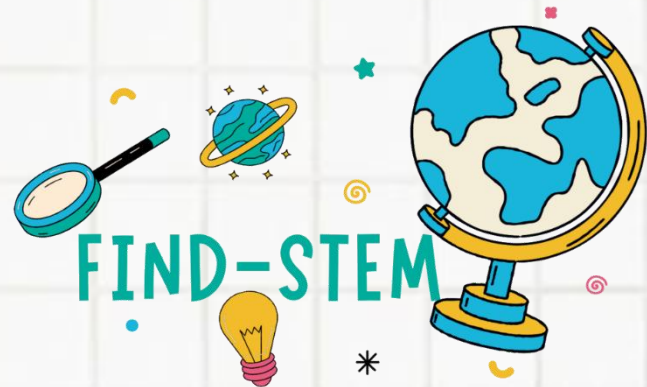
2

Create emotionally supportive classroom environments.

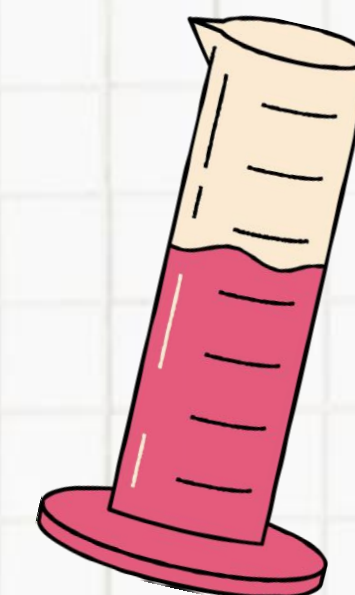
3

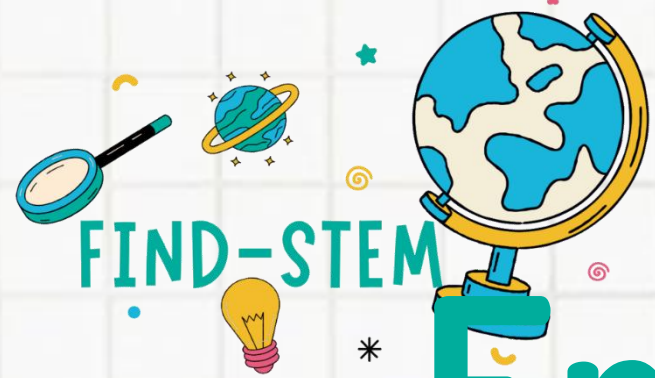
Reflect on the role of empathy in collaborative STEM tasks.



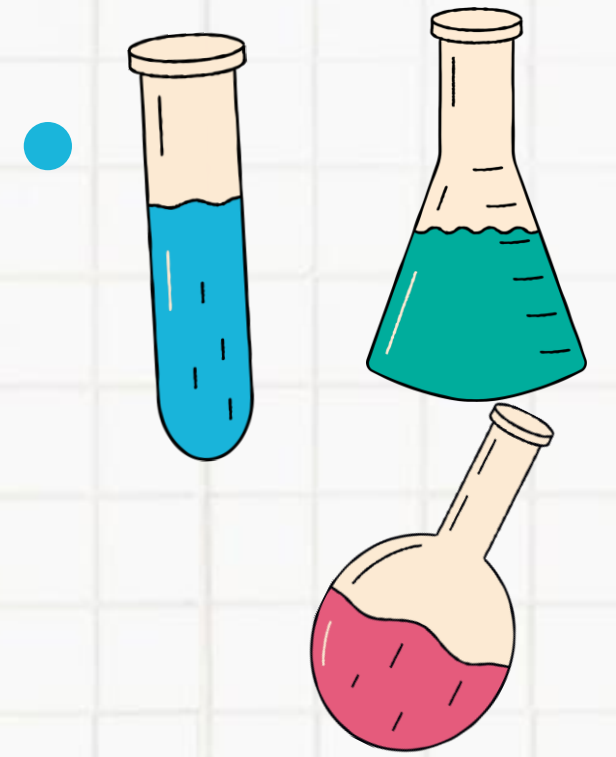


Think of a time when
emotions helped or
hindered your learning.
What happened?





Emotional intelligence in STEM Activity

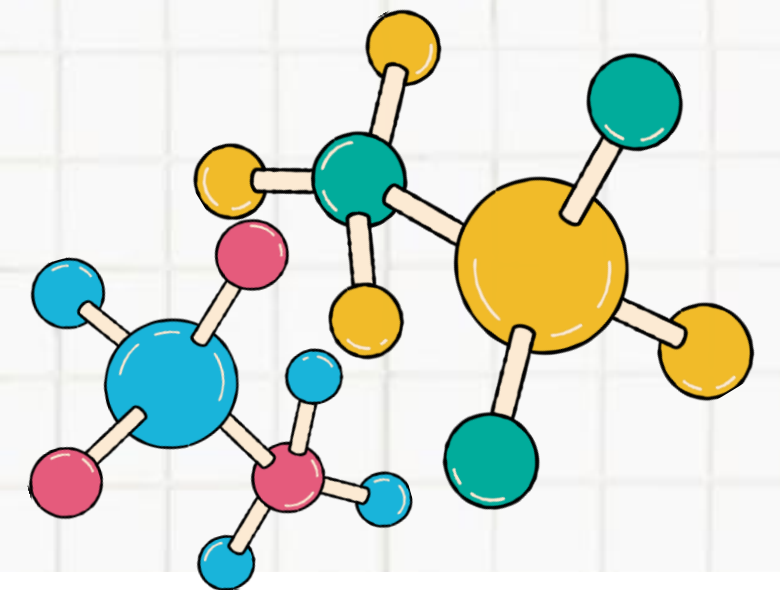


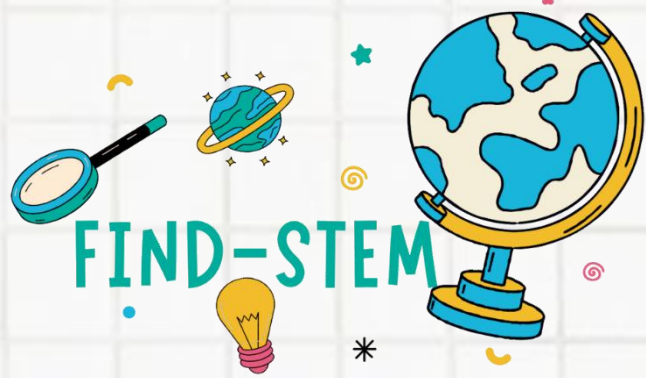
Challenge: In small groups design a mini-STEM task where students reflect on emotional responses at different stages.

Prompt:

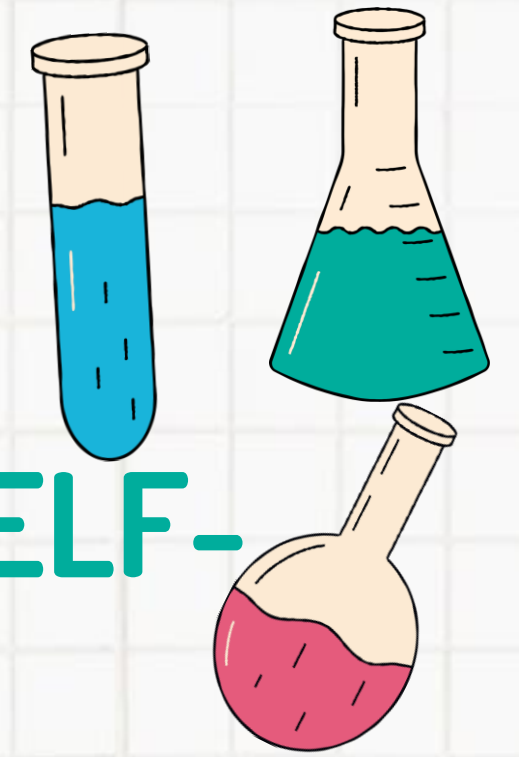
- How will students be guided to name and process their emotions?
- Include an emotional support strategy

* **How can integrating EI change classroom dynamics?**





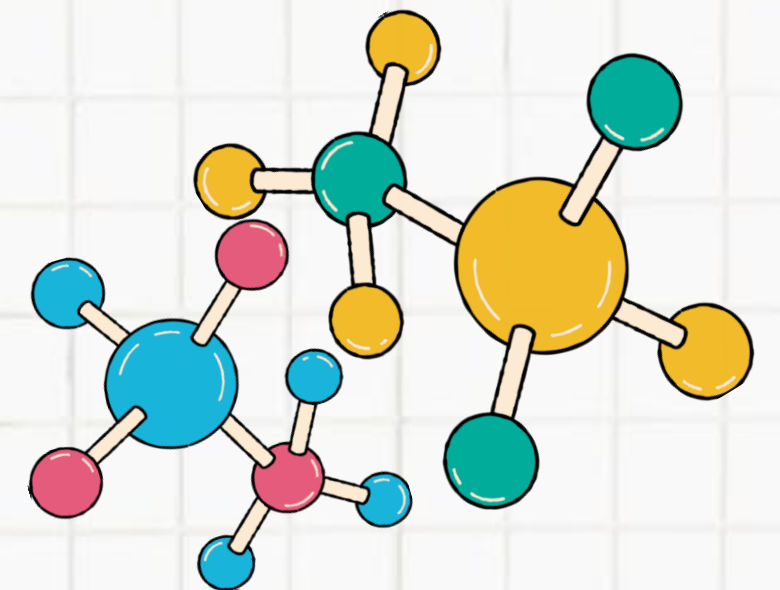
INTEGRATING EMOTIONAL INTELLIGENCE AND SELF-

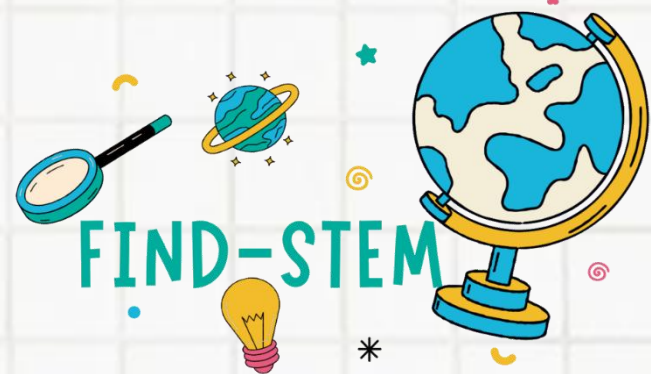


EXPRESSION IN STEM TEACHING

Emotional intelligence consists of abilities such as self-awareness, self-regulation, empathy, and interpersonal skills. These abilities play an important role in fostering teamwork, resilience, and persistence – attributes essential for success in STEM disciplines.

Self-expression encourages students to verbalise their thoughts, feelings, and experiences, and this has the potential to make them feel more engaged in the subject and increase learning. With tools such as group work, open-ended projects, and reflective journaling, learners can explore the ways STEM impacts their lives and communities while gaining outstanding emotional control and communication skills.



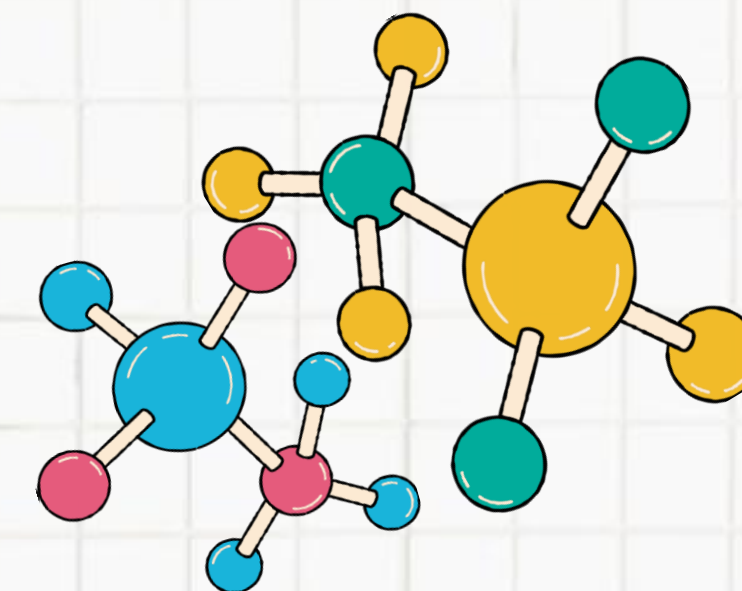


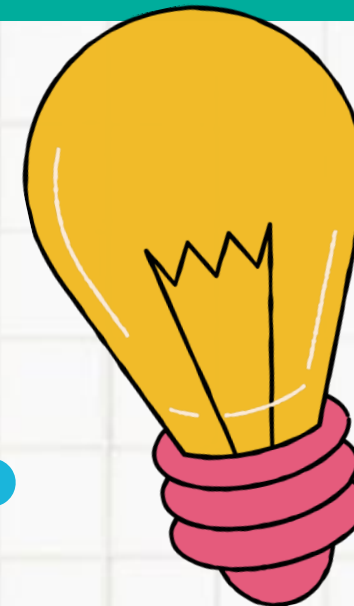
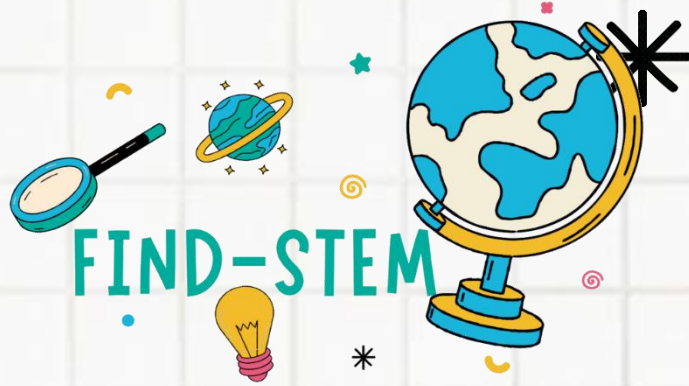
INTEGRATING EMOTIONAL INTELLIGENCE AND SELF-EXPRESSION IN STEM TEACHING



The addition of emotional intelligence and self-expression to teaching STEM is a holistic approach blending cognitive learning and emotional and social abilities. With the addition of Emotional Intelligence, teachers can achieve a more empathetic, engaging, and nurturing class atmosphere that enables students to emotionally connect with the topics they are learning.

It particularly suits girls, as it creates a space to learn that embraces emotional expression along with analysis, removing obstacles typically that stop girls from playing an active part in STEM.

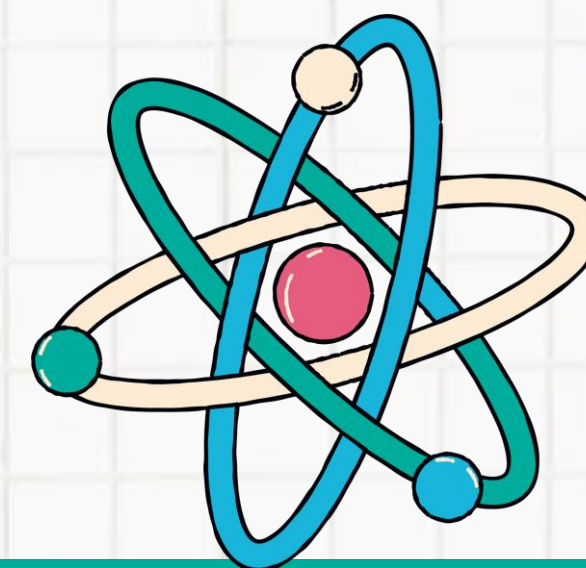


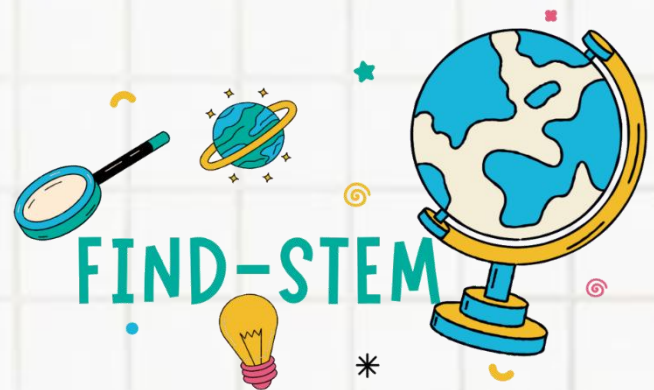


Additional Resources

UNICEF: Video Girls Can Code:

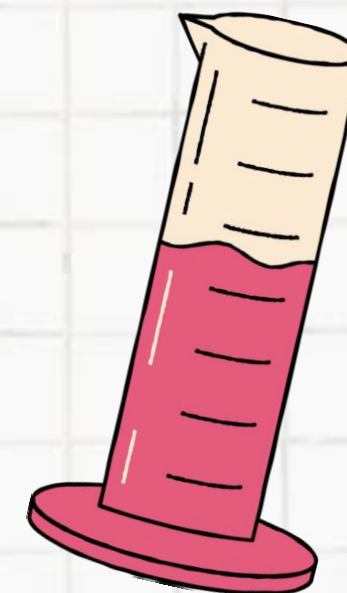
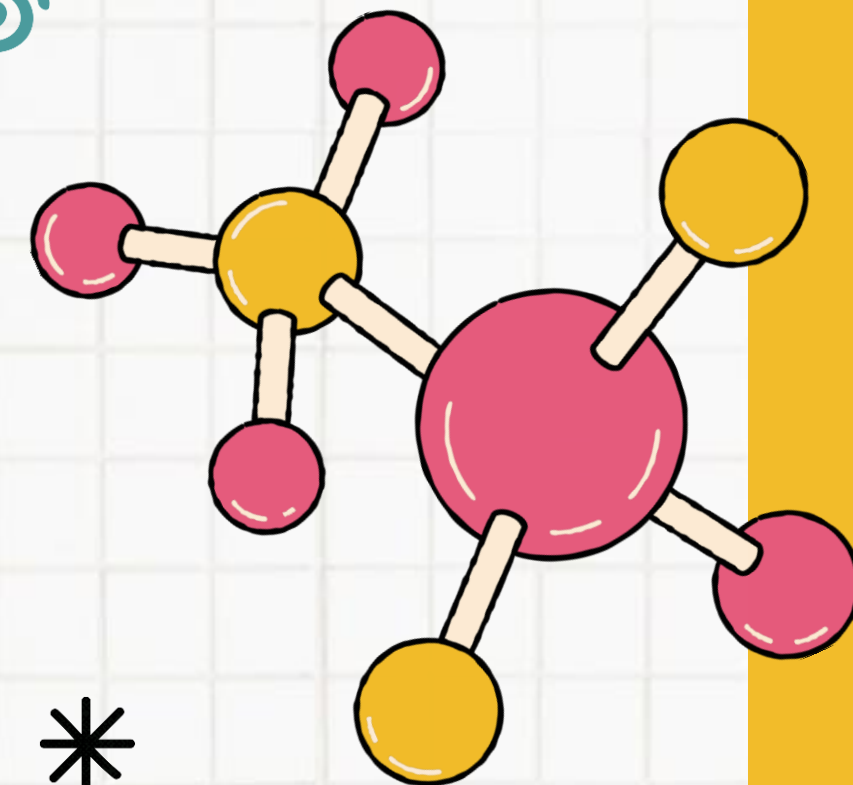
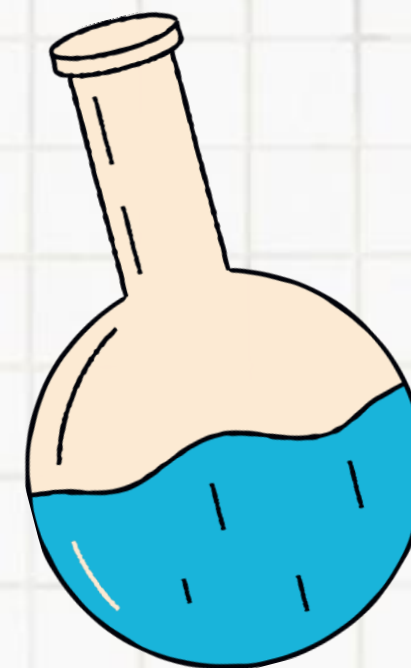
<https://www.youtube.com/watch?v=C4SM9D-VmUo>

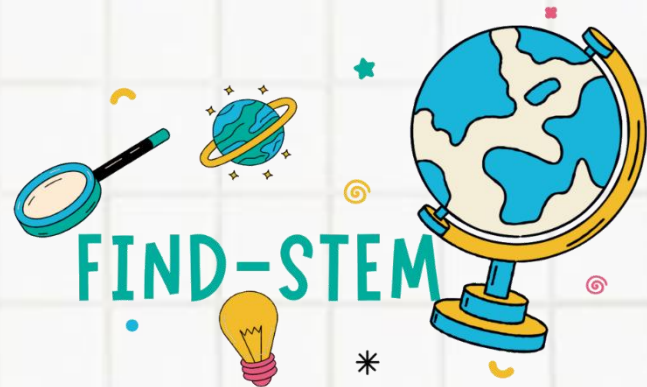




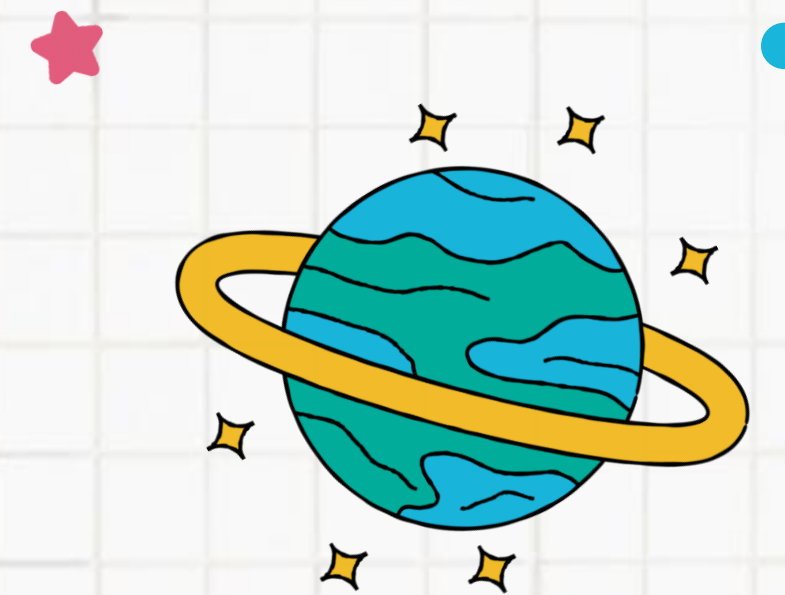
ACTIVITY 3

Inclusive STEM practices





OBJECTIVES



1

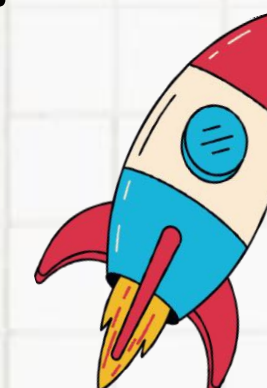
Recognise and respond to gender bias and stereotypes in STEM settings.

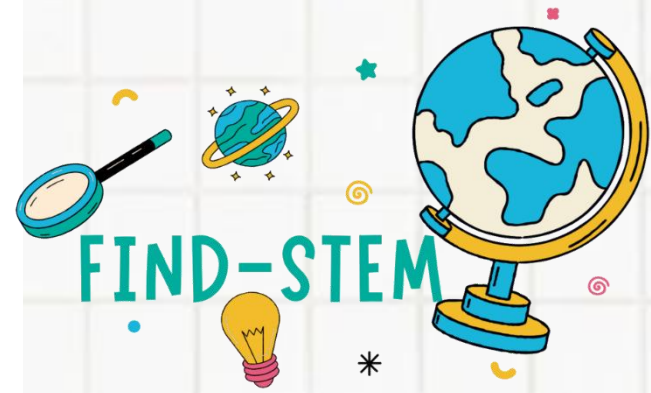
2

Develop practical strategies to build inclusive classroom practices.

3

Explore how inclusive pedagogy enhances student engagement.





GENDER BIAS BUSTERS

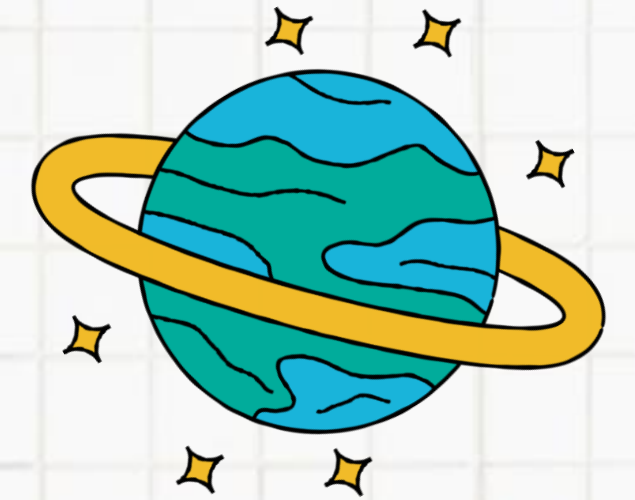
ACTIVITY

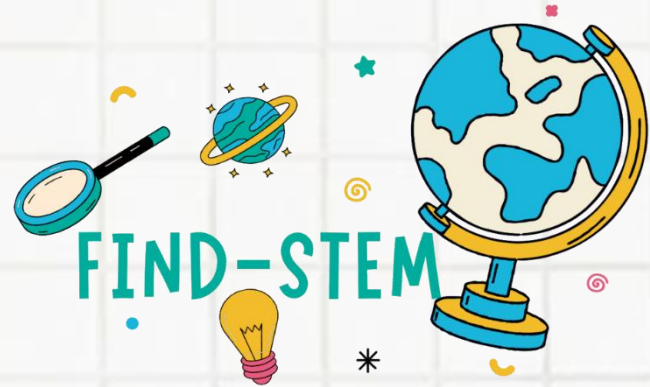
Challenge: Recognise unconscious classroom bias

Instructions:

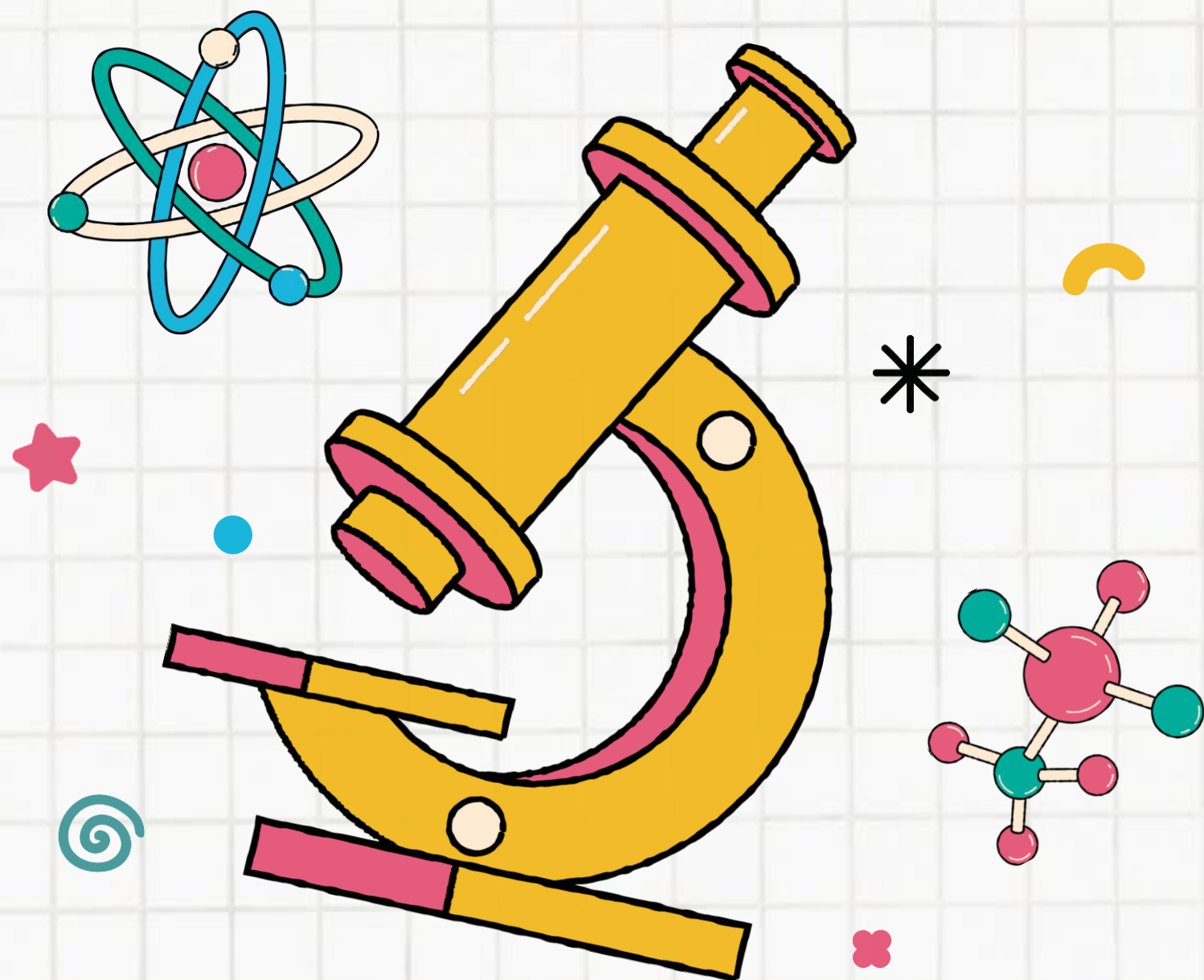
- Read the case story
- In small groups discuss:
 - What forms of bias are present?
 - How could a teacher effectively respond?
 - What systemic issues does the scenario reflect?
- Each group creates a short scene illustrating how a teacher might intervene in real time
- Build a list of inclusive STEM practices.

What was effective? How might students react?





STRATEGIES FOR CREATING A SAFE AND INCLUSIVE CLASSROOM ENVIRONMENT

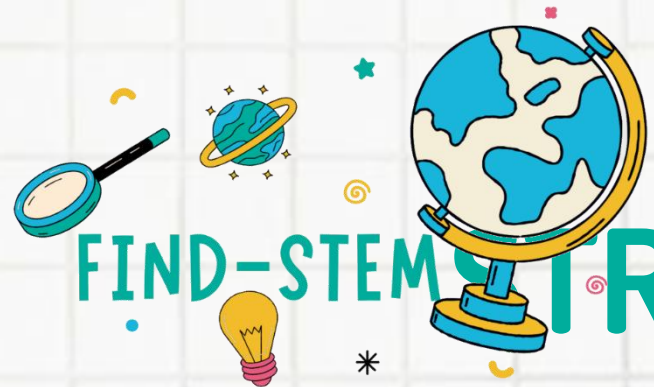


- Establish clear classroom norms that prioritise respect and inclusivity.

Example: Start the school year with a collaboratively created classroom agreement that includes “listen without interrupting” and “respect different opinions.”

- Incorporate diverse perspectives and experiences into course materials

Example: Use case studies, examples, and guest speakers from various backgrounds, including women and minorities in STEM fields.

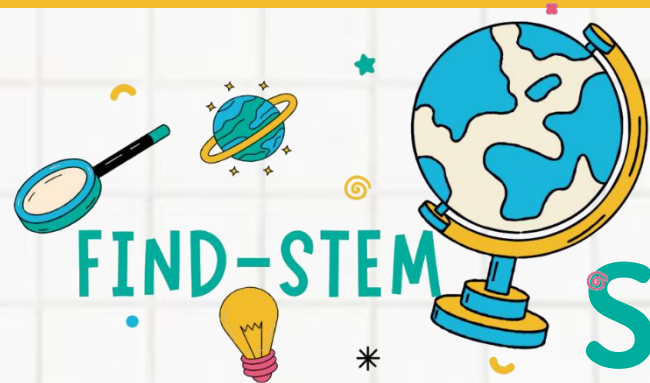


STRATEGIES FOR CREATING A SAFE AND INCLUSIVE CLASSROOM ENVIRONMENT



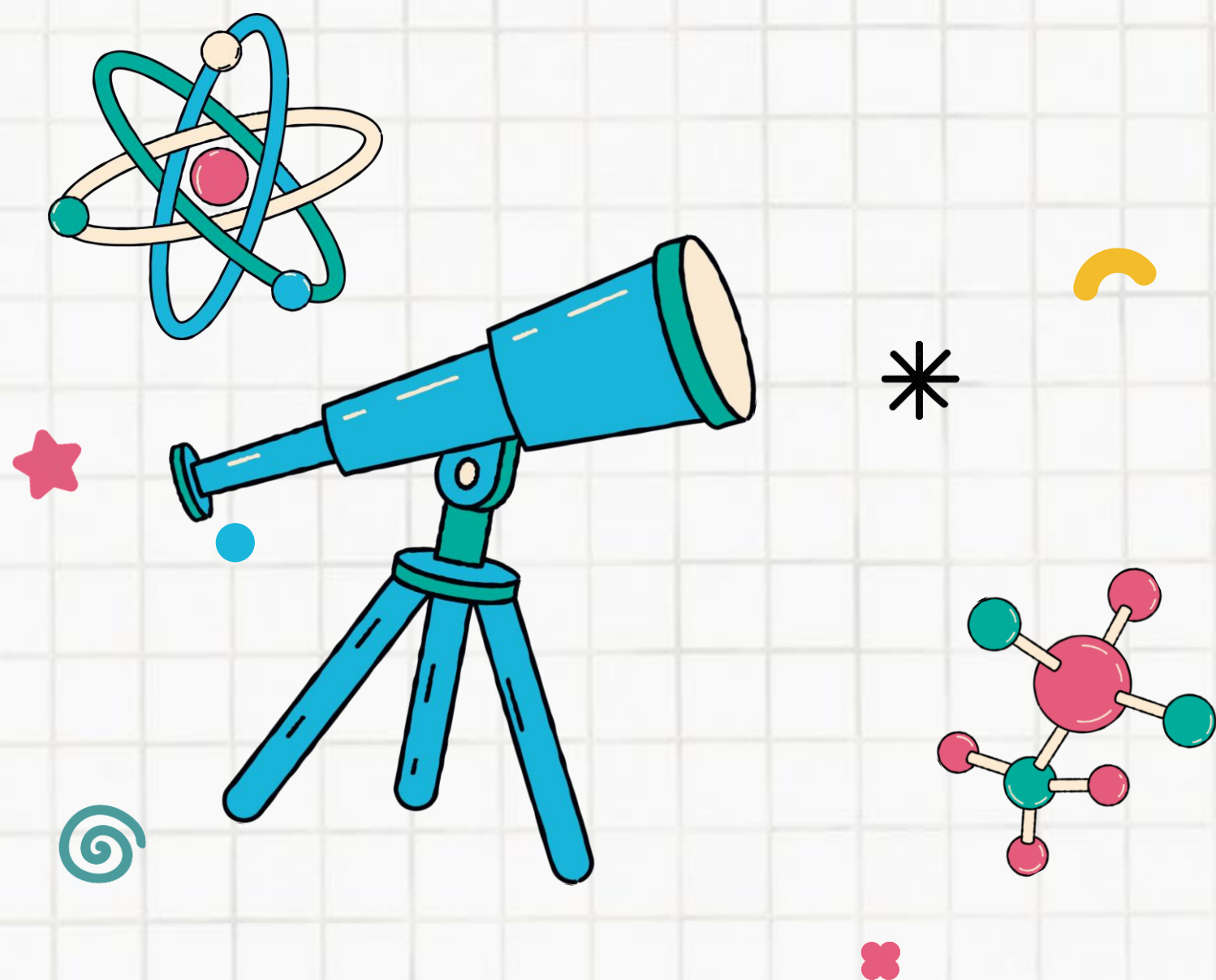
- Address bias and stereotyping directly and constructively
Example: Discuss implicit bias openly in class. For instance, when analysing historical scientific contributions, explore why certain figures (e.g., women, individuals from various national backgrounds) were overlooked.
- Model inclusive behaviours as an educator
Example: Use students' correct names and pronouns and acknowledge contributions from all students equally during discussions.





FIND-STEM

STRATEGIES FOR CREATING A SAFE AND INCLUSIVE CLASSROOM ENVIRONMENT



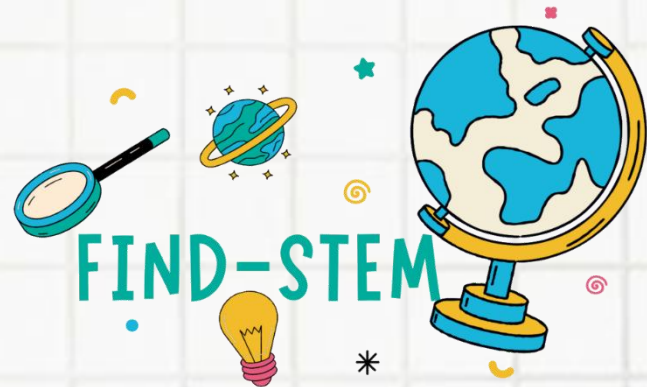
- Ensure all student voices are heard and valued

Example: Use techniques like “think-pair-share” or calling on students in a structured way to ensure quieter students also get a chance to speak.

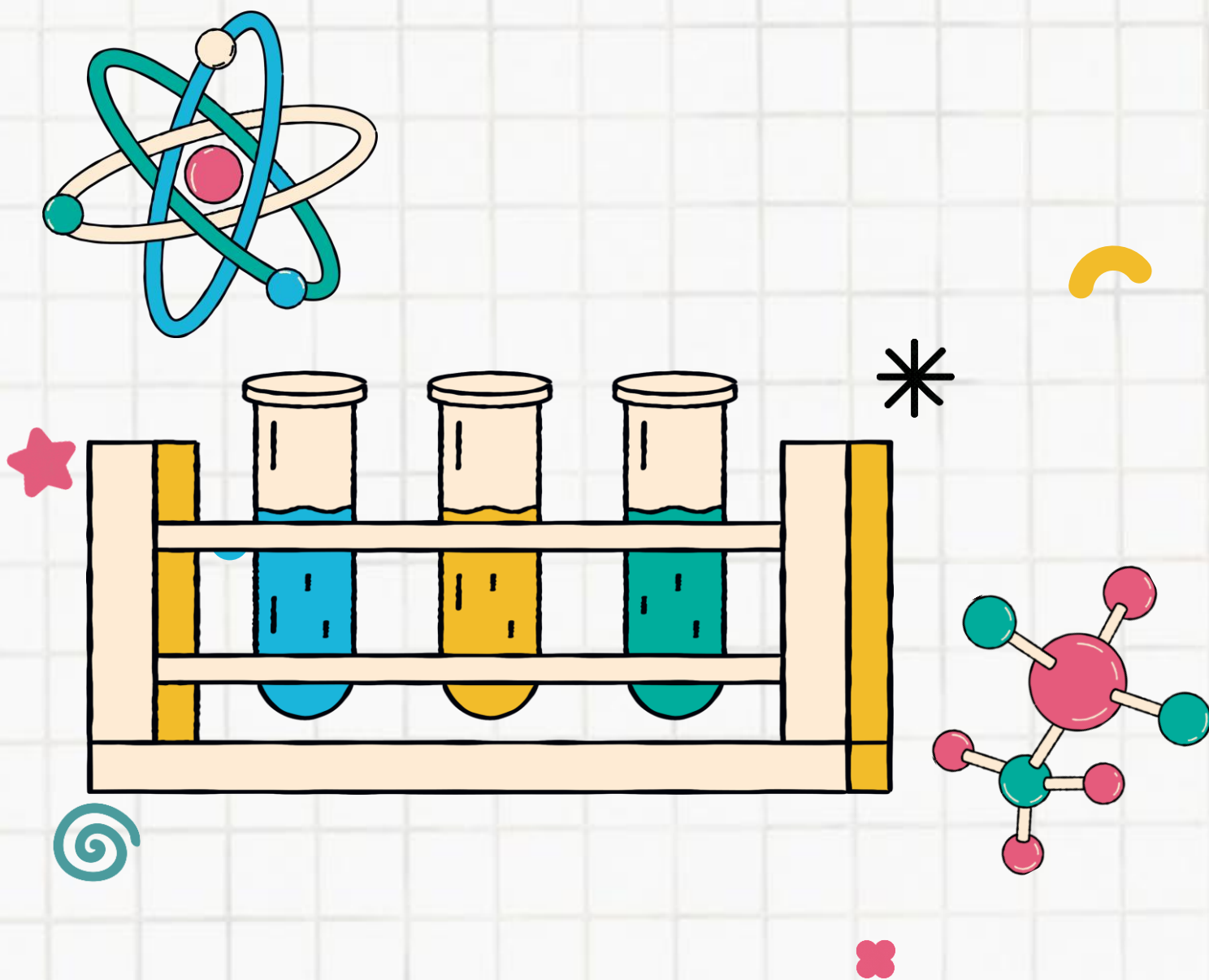
- Use pedagogical approaches that promote equal participation

Example: Incorporate active learning strategies such as group problem-solving where roles rotate, ensuring each student contributes.





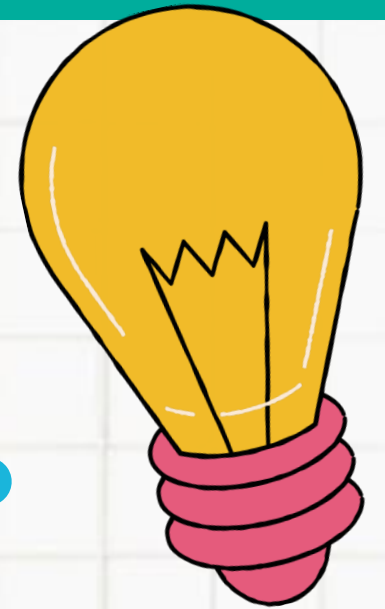
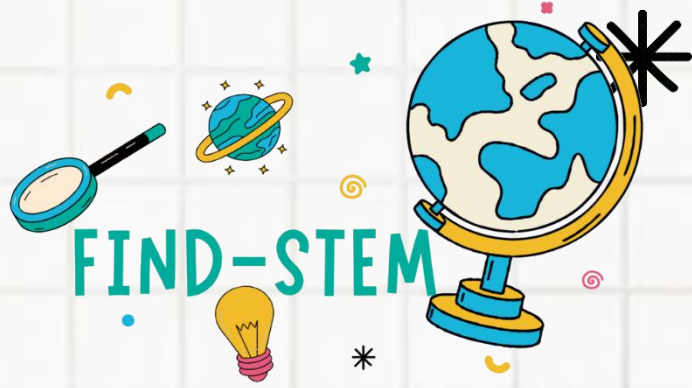
STRATEGIES FOR CREATING A SAFE AND INCLUSIVE CLASSROOM ENVIRONMENT



- Create judgment-free spaces for students to express themselves

Example: Encourage creative projects where students can explore STEM topics through art, storytelling, or cultural perspectives, with an emphasis on process rather than perfection.

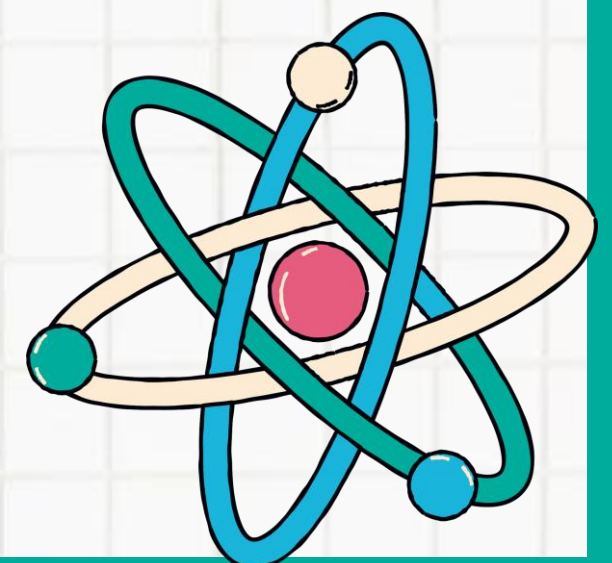
- Empower underrepresented students, especially girls, to build confidence in STEM
- Example: Offer leadership roles in STEM activities (like robotics clubs or science fairs) to girls and underrepresented students and connect them with mentorship opportunities.



Additional Resources

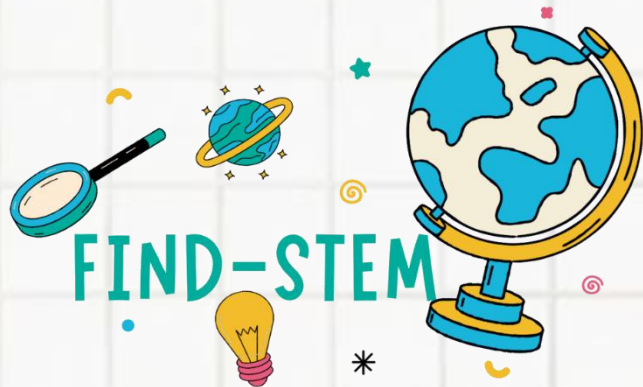
Gender Stereotypes and STEM (Bannikova et al.):

https://www.researchgate.net/publication/329659453_GENDER_STEREOTYPES_AND_STEM_EDUCATION




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RESOURCES

UNESCO: "Amplifying Women and Girl's Voices in Science" 
([YouTube](#))

UNICEF: "Girls Can Code" ([YouTube](#))

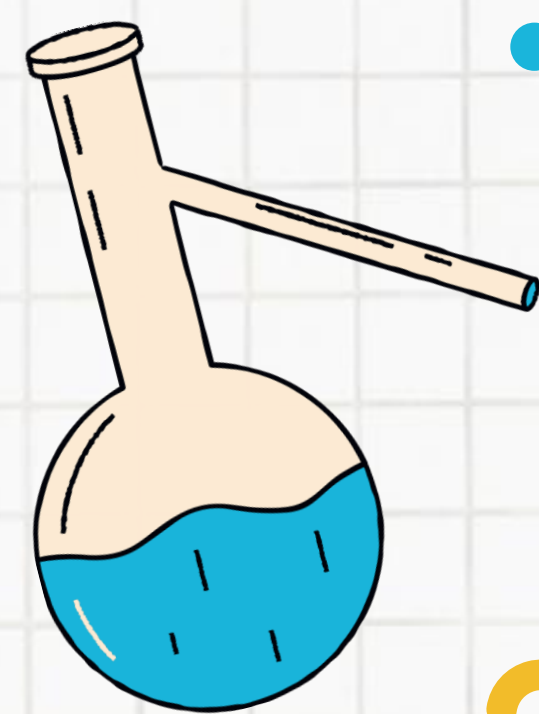
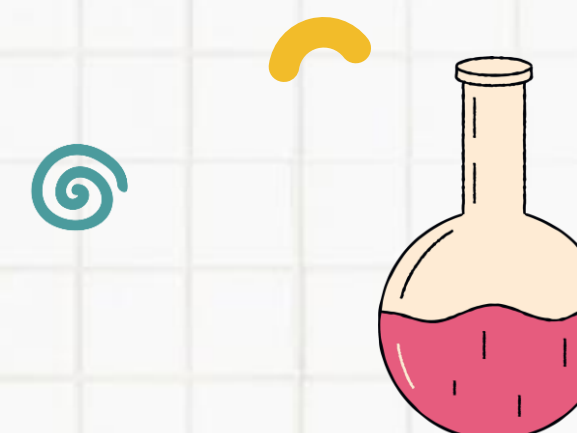
Twinkl Educational Publishing: "Women Scientists Behind NASA's Greatest Achievements" ([YouTube](#))

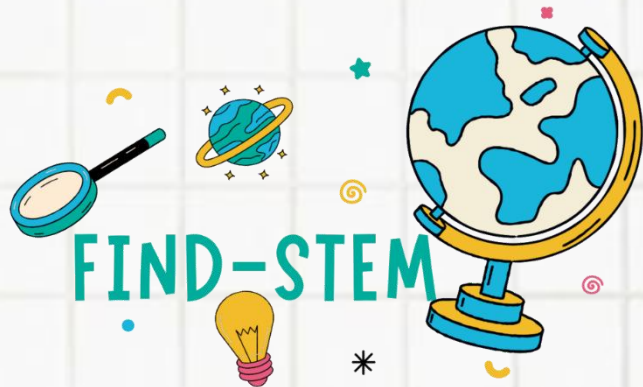
UNESCO: Resource guide: Building girls' interest in STEM education
([GUIDE](#))

[Let's Talk Science](#) platform offers hands-on activities for science education at all school levels.

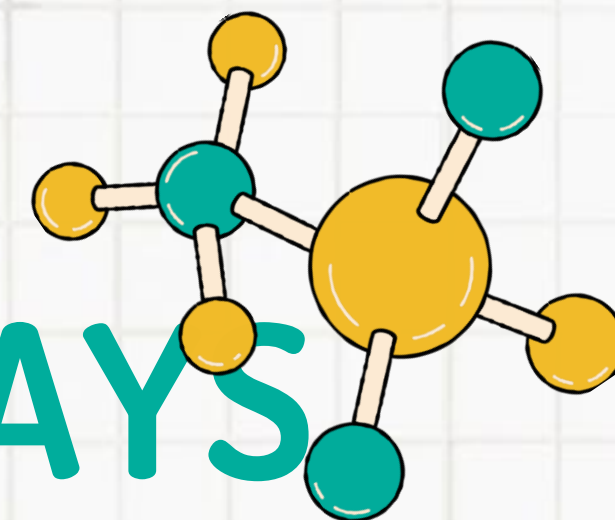
[Get in the Game](#) Build a board game and practice computational thinking skills with this activity from The Tech Interactive 

[Scientists' Stories](#)





SUMMARY OF KEY TAKEAWAYS

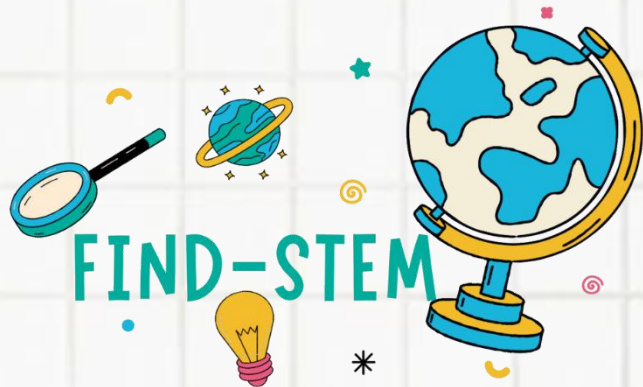


1. Actively engaging girls through role models, mentorship, and design challenges can increase their interest in STEM.

2. Integrating emotional intelligence and self-expression helps create a supportive environment that allows all students to thrive.

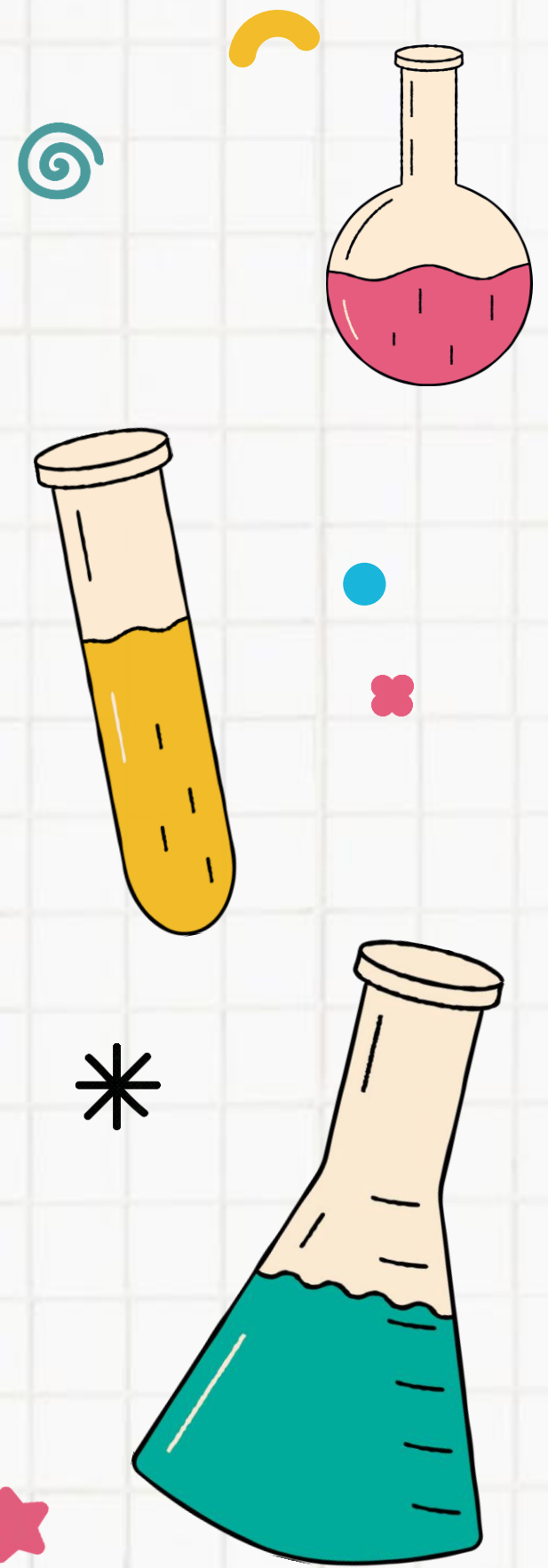
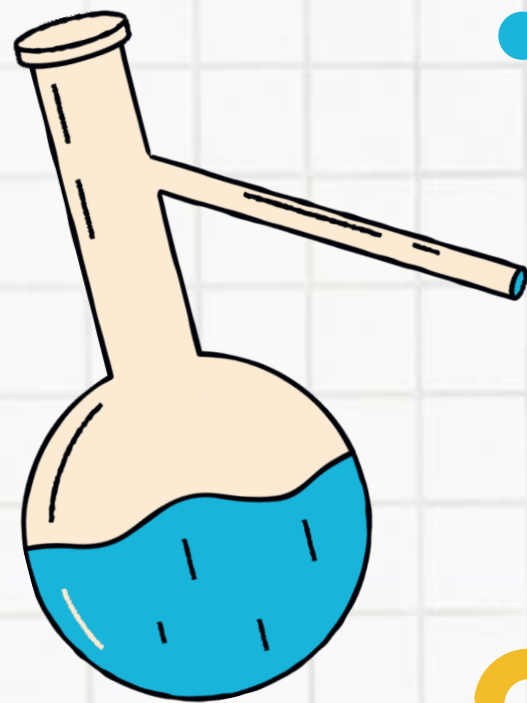
3. An inclusive classroom environment, free of bias, is key to fostering participation and success in STEM for underrepresented students.

4. Effective assessment strategies for these activities should focus on personal reflections, peer collaboration, and inclusive contributions.



References

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THANK YOU!

Any questions? Don't hesitate to
ask for our help



Co-funded by the
European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the National Agency. Neither the European Union nor the National Agency can be held responsible for them. Ref. no. 2024-1-EL01-KA210-SCH-000249907