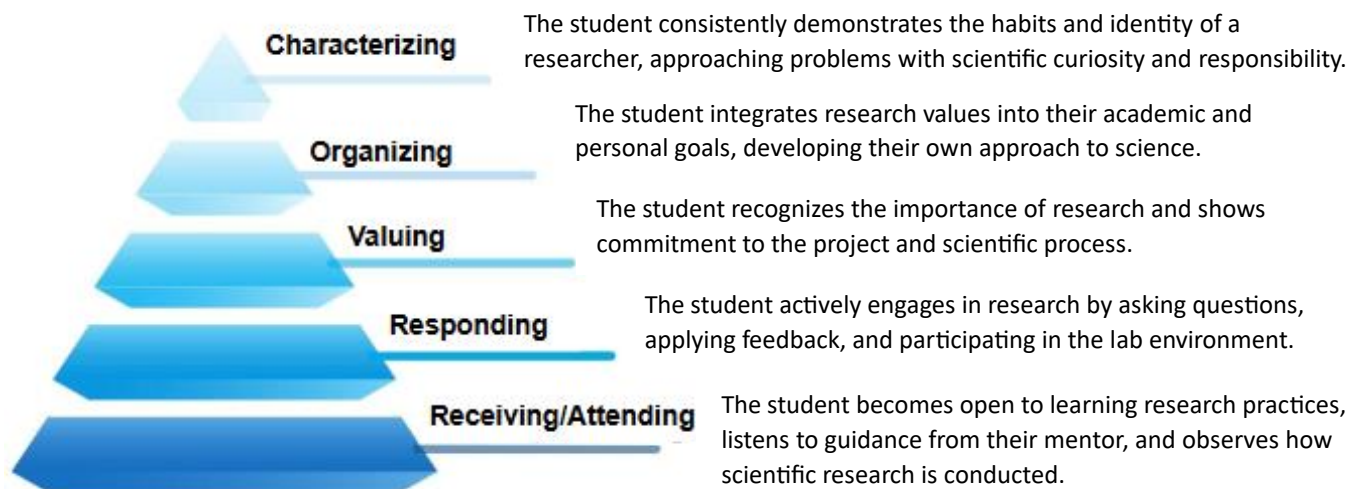


Fostering Belonging, Science Identity, and Self-efficacy

To support students in developing a sense of belonging within your lab and the broader scientific community, strengthening their self-efficacy in research skills, and ultimately fostering a science identity, it is important to intentionally cultivate these psychosocial constructs that contribute to persistence in STEM. Use the template below to describe the specific strategies and practices you will implement to help students move towards these goals. The pages following provide a reminder of the factors that influence each of these constructs.



Higher-order skills ↑

Receiving/Attending: _____

Responding: _____

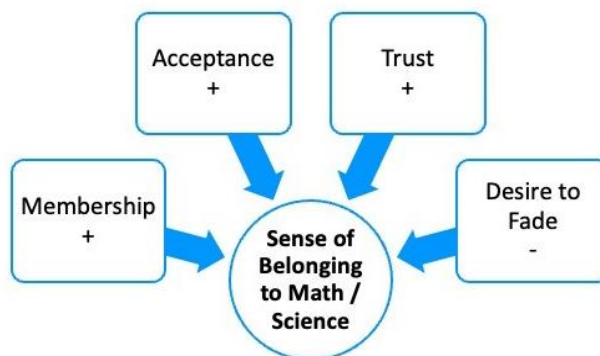
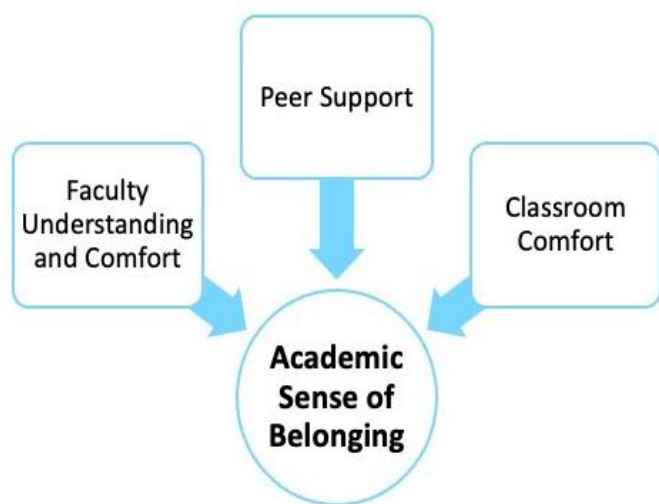
Valuing: _____

Lower-order skills ↓

Organizing: _____

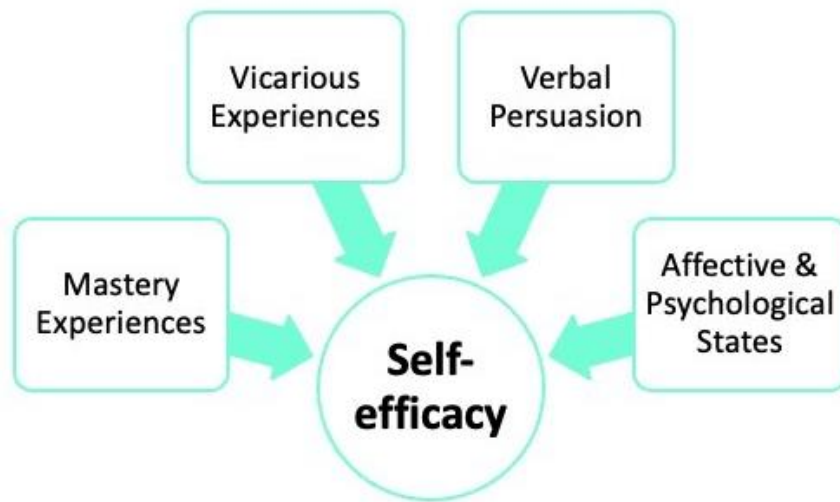
Characterizing: _____

Sense of Belonging



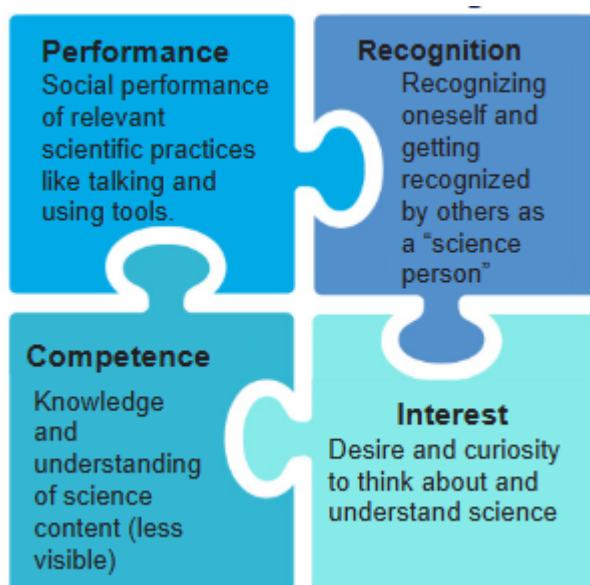
Affective Domain Stage	Student Experience	Mentor Moves to Support Sense of Belonging
Receiving/Attending	Students notice that belonging matters when they experience supportive peers and inclusive mentors.	Learn and use students' names, explicitly welcome them, normalize mistakes, and create a supportive environment for questions and participation.
Responding	Students begin engaging by joining discussions, attending events, and sharing ideas.	Create structured collaboration opportunities, affirm contributions, provide encouraging feedback, and support peer connections.
Valuing	Students begin to see belonging as personally important and feel comfortable within the research environment.	Acknowledge students as valued members of the research team, recognize contributions, and support their growth and voice.
Organizing	Students integrate belonging into their identity and begin supporting peers and participating in the broader community.	Encourage conference participation, provide leadership opportunities, support peer mentoring, and model resilience and trust.
Characterizing	Students see themselves as integral members of the scientific community and act with increasing independence.	Introduce students as colleagues, support ownership of ideas, foster leadership skills, and balance autonomy with guidance.

Self-Efficacy



Affective Domain Stage	Student Experience	Mentor Moves Based on Bandura's Factors
Attending	Unsure, nervous	Reframe anxiety as excitement, create welcoming low-stakes environment, normalize mistakes (Affective states)
Responding	Tentative participation	Specific encouragement "Your observation about x shows strong analysis" (Verbal persuasion); Model own problem-solving out loud & pair with more advanced peer (Vicarious)
Valuing	Feels belonging, work matters	Scaffold tasks, celebrate wins (Mastery); Affirm persistence (Verbal persuasion)
Commitment (Organizing & Characterizing)	Identifies as capable, takes challenges	Provide independence/lead roles (Mastery); Have them mentor others (Vicarious); Highlight future potential (Verbal persuasion); Coach in stress management & resilience (Affective states)

Science Identity



Affective Domain Stage	Science Identity Growth	Key Mentor Moves	
	Attending	Interest sparked; uncertain belonging	Share personal stories, diverse role models, affirm curiosity/questions as part of what scientists do
	Responding	Begins performing science behaviors	Model scientific thought; scaffold experiences; normalize learning, provide low-stakes feedback that reinforces process not perfection
	Valuing	Feels capable and valued	Recognize contributions; offer feedback that ties performance to growth in understanding; encourage presentation at lab meetings
	Commitment (Organizing & Characterizing)	Self-identifies as scientist	Offer leadership roles; letters of recommendation that emphasize identity as a scientist; support reflection on how their science connects to community or social impact