In addition to the SciGirls Strategies themselves, research and practice highlight the need for educators to consider the learning environment and to utilize culturally responsive practices to engage and effectively serve all girls in STEM, especially girls of color and girls from marginalized communities. Both the learning environment and culturally responsive practices are important in helping foster a STEM identity.

Create a STEM for ALL learning environment
For the SciGirls Strategies to be as effective as possible, it is critical to provide a supportive space and learning environment that fosters mutual respect, looks and feels inviting, and allows girls to feel that they belong. Research shows that a learning environment that is comfortable, personally meaningful, collegial, and supportive can positively impact girls’ interest and motivation in STEM and positively influence girls’ STEM identities. The learning environment must also be culturally responsive, one that recognizes, reflects, and validates the history, cultures, and world-views of youth. In such an environment, diversity is valued as an asset, which leads to effective teaching and learning.

Tips to create a STEM for ALL learning environment
- **Create a warm and welcoming space that is accessible to all and fosters cooperation and acceptance.** Create an organized space where everyone can move easily and safely and work in a collaborative way.

- **Learn about your youths’ needs.** The tools to make the environment accessible and welcoming vary depending on individuals’ needs (vision or hearing impairments, sensitivity to light, etc).

- **Practice and encourage active listening.** Active listening includes orienting your body to the speaker, maintaining eye contact, nodding your head, using facial expressions (e.g., smile, frown) and verbal cues (e.g., “That is interesting”).

- **Create an atmosphere of mutual respect.** Shared expectations help develop a sense of community and encourage positive interactions.

- **Use icebreakers so youth can introduce themselves in a non-threatening manner.** This activity allows your youth to relate to each other and share and appreciate differences among them.

- **Provide opportunities for youth to voice their opinions and feel accepted.** Encourage active participation by all youth and structure tasks that have multiple paths to a solution.

- **Form meaningful connections with youth.** Take some time to view everyone as an individual—encourage them to share their own lives and interests—and show them that you believe in their abilities.
Adopt Culturally Responsive Practices

Embrace diversity
The population of the United States is becoming increasingly diverse and this diversity is reflected in our K-12 schools. By 2044, half of all Americans are projected to belong to a minority group resulting in a significantly more ethnically and culturally diverse population. For example, one in four female students in public schools across the nation is Latina; by 2060 that number will increase to one in three. Therefore, the youth you work with may differ from you and each other in ethnicity, race, language, and socio-economic background. To truly engage diverse youth in STEM, it is critical to reach out to them in ways that are culturally responsive and appropriate.

Culturally responsive practices (CRP) support student achievement by providing effective teaching and learning in a culturally supported environment that is student-centered. In these environments, educators identify, nurture, and use the strengths that students bring to the learning space to facilitate and promote student achievement. Geneva Gay, a professor in multicultural education, describes CRP as teaching to and through the strengths of students who are culturally, ethnically, and linguistically diverse. She defines culturally responsive teaching (CRT) as a process of using cultural knowledge, prior experiences, and performance styles of diverse students to make learning more appropriate and effective for students.

CRP empowers youth by respecting and incorporating their interests, identities, cultures, backgrounds, and experiences as central to the learning process. Culturally responsive practices are particularly effective in motivating and engaging girls of color in STEM studies and careers as they recognize girls' culture as an important strength upon which to construct the STEM learning experience.
Getting started on your journey to cultural responsiveness

A culturally responsive educator is someone with the knowledge, attitudes, and skills to work effectively with and successfully engage youth from different cultures. Cultural responsiveness is a sensibility that we acquire throughout our life. Here are a few tips on how to become more culturally responsive.

- **Understand your own culture and how it affects others.** Engage in self-reflection regarding how your values, attitudes, experiences, and social context shapes your instruction and how it might be improved.

- **Get to know your youth and build on their life experiences.** Provide opportunities for youth to share their interests and personal experiences and connect them to STEM.

- **Demonstrate caring.** Develop meaningful relationships with youth by engaging them personally and getting to know what they like and value.

- **Communicate high expectations for behavior and performance.** Communicate clear and specific expectations, and let youth know that you believe in their capabilities. This can increase their confidence and their motivation to tackle challenging problems.

- **Provide opportunities to belong.** Foster a sense of belonging with youth by listening to their ideas and letting them make real-world connections to the activities they participate in.

- **Embrace participants’ home language.** Validate youth’s bilingual abilities to leverage learning and make youth feel welcome and accepted.

Go to the scigirlsconnect.org website and watch the SciGirls Snapshots for more information about culturally responsive teaching and becoming a culturally responsive educator.