Real-Time Strategies and Recommendations for Engaging Black and Latinx Audiences

Acknowledging and Addressing Biases and Understanding Systematic Opportunity Gaps

- Reflect and understand your own racial biases.
- Understand systematic challenges and build understanding of cultural awareness.
- Embrace and use asset-based and anti-racist language and thinking.
- Be prepared to adjust your engagement strategy based on participants’ interests.

Equity-oriented and Authentic Partnerships & Relationships

- Partner with individuals or a group who are already a part of the community.
- Invite partners to actively participate in planning and provide them with equal credit.
- Learn the community’s culture, predominant languages, and location.

Using Audience-Centered Strategies

- Plan for and support sense-making experiences.
- Support participation opportunities for all ages.
- Leverage local cultural assets.
- Demonstrate relevance of activities to participants’ lives and build connections to the audience’s culture and incorporate examples from diverse cultures in programs.

Supplementary Reading

- Culturally Relevant Teaching
- Funds of Knowledge

References

Acknowledging and Addressing Biases and Understanding Systematic Opportunity Gaps

Reflect and understand your own racial biases.

Race is a social construct. However, racism has material, emotional and social consequences. Understanding how you are positioned due to racism and how you may impact others due to your implicit thoughts and explicit actions matters when engaging in planetary education outreach. For example, saying “I don’t see color” will prevent you from understanding the diverse cultural assets that participants bring along with opportunity gaps that exist for People of Color. In another example, overly praising children of color for their scientific ideas compared to their white peers can actually signal that you are surprised or did not expect a child of color to have strong scientific ideas to share.

Actions/key reflection questions:
● How are you racialized by others? How does that position your access to power across society?
● What stereotypes do you have about your own and other racialized groups?
● To address your biases in action, how will you attend to:
  ○ How participants are invited and welcome to participate with each other, you and any activity materials?
  ○ Who gets asked different types of questions?
  ○ Are you avoiding asking questions or responding to participants in tokenizing ways?

Understand systematic challenges and build understanding of cultural awareness.
Build your knowledge of the audiences’ culture and do your best to learn about the complexities of that culture’s history and potential unintentional barriers that this history might generate. For instance, when describing planetary exploration activities, be aware that many cultures have experienced extreme oppression and even annihilation as a result of Western exploration (i.e. colonization).

Actions:

● Avoid triggering words like “colony” for lunar and Mars exploration. Instead, invite the audience to share how, when, and why they have explored a location like their school, town, or nearby features like caves and canyons.
● Invite a discussion of exploration in reference to experiencing nature (e.g. camping, hiking, other outdoor or nature activities relevant to the audience).
● Link discussions to the community’s priorities and experiences. Communities who have dealt with hurricanes may be more interested in the Great Red Spot, while those in desert environments may be more interested in conditions and the dry riverbeds on Mars. When applicable, link what we are learning through planetary exploration to solutions to problems in their communities; for instance, technologies to filter and recycle water resources in a spacecraft may also be useful in reference to urban water systems, or communities suffering from drought.

Embrace and use asset-based and anti-racist language and thinking.
Understand that children and families of color have important and meaningful contributions to make. Avoid negative and deficit-language. Focus on what families do know and bring to learning opportunities. One common racist notion is that “Children of Color are not interested in space”. This deficit-based idea ignores children’s interests as well as the systematic barriers that impact children’s opportunities to engage with planetary science.

Actions:

● Have high expectations for all learners and support their confidence as capable learners. For instance, do not immediately focus on or correct what participants share; build from what they have shared that is correct.
● Design and ask questions that value multiple forms of knowledge (personal, cultural and scientific expertise).
• Ask community partners and families to help adapt curriculum and activities to reflect the assets of the local community. For example, when creating analogies for planetary exploration or historical figures or experiences, invite partners or other participants to help define the people and places and methods that are of significance to them rather than selecting those you are familiar with.
• Challenge others’ when they use deficit-based language and help them to interrogate how white systems of power have created opportunity barriers for Black and Brown communities.

Be prepared, in any environment, to adjust your engagement strategy based on the participants’ interests, but do not assume that differences reflect a difference in learning abilities. Recognize the assets that all learners bring.

Equity-oriented and Authentic Partnerships & Relationships (first and ongoing steps)

Partner with individuals or a group who are already a part of the community as a first step in engaging that community. For example, when planning a planetary program that is geared towards an afterschool program, connect and work with a local educator in a local out-of-school time program to decide which activities will work best and how they should be modified.

Invite community partners to actively participate in public engagement events and provide them with equal credit for the event. Ask for their feedback and actively engage them in event planning drafts and discuss their reflections and recommendations after each event. Include their input and names in news articles and reports.

Learn the community’s culture, predominant languages, and location. Use what was learned to help better relate science content to the community. For example, when conducting a scale model of a planet or of the solar system, use local sports teams, landmarks, or other key locations (e.g. local schools, stores, etc.) as a basis for comparison rather than remote sites and unfamiliar sports/activities/events.

Using Audience-Centered Strategies

Plan for and support sense-making experiences.
Support children and families to engage with materials and activities, elicit their ideas and wonderings and support all participants to build on each others’ ideas and incorporate their life experiences to better understand key concepts. In an activity focused on gravity on other planets, let families and children engage in the materials as they want and in creative ways. Use open-ended questions like, “What did you notice when you explored the different scales?”, “What do you wonder?”, “Who wants to build on those ideas?”,
“How do you think NASA should use this information?” These types of questions allow children to share their ideas, build on each others’ ideas and apply them in creative ways. To support sense-making avoid asking closed-ended questions or having one-solution engineering challenges. Let participants explore their own ideas in open-ended activities rather than push for one specific right answer. For instance, let them create and test different “space suits” of materials to test which protects UV beads from solar radiation, and connect their findings to protection from skin cancer. Incorporate engineering-design activities, inviting participants to design and then re-design and revise lunar landers and Mars paper helicopters, while personalizing their inventions. Invite participants to share how their own experiences (for instance, with walking in a windy area or jumping down from something) can give them ideas.

**Actions:**
- During engagement, use sentence starters like:
  - What do we see going on here?
  - What did you notice when ____ happened?
  - Do we see any patterns in what happened?
  - What might be going on here that we can’t see?
  - What do you think causes _________?
  - What are some things that we are not sure about?
  - How could we test those ideas?
  - Can you tell me more about what role idea X has in your explanation?
  - How does your model fit with other ideas you have learned in science?
- Design and use activities that are not looking for the one correct answer rather provides opportunities for inquiry, exploration and building on others’ and one owns previous and new ideas.

**Support participation opportunities for all ages.**
For instance, support communications between family members during programs by inviting parents and grandparents to help guide children during family events, and (when appropriate) to answer their children’s questions. Similarly, invite children to help answer their parents’ questions. For example, during a question from a child about volcanism, invite the parents to share if they’ve ever seen a volcano on Earth, and what it was like for them. Connect activities and themes to participants’ relationships and families when describing systems. For instance, the objects in the solar system could be described as a family, with parents in orbit around a grand-parent (the Sun), and some of those parents (planets) having children (satellites) of their own. Invite participants to help you create new analogies for systems using their families, school, and more.

**Actions:**
- Plan for ways to keep different ages to participate actively in family events; prepare for very young children and grandparents. For instance, include crayons or coloring pencils for preschoolers to color the Mars paper helicopters which their family members can help cut out and assemble.
● Provide familiar materials like Legos and building blocks as part of an activity for the younger children.
● Provide chairs for grandparents to sit and observe and include them in the conversations.

Leverage local cultural assets.

While Black and Latinx people are disproportionately underrepresented as planetary scientists, it is critical to recognize and leverage these communities’ unique values, assets, and contributions. Provide examples of planetary scientists that are reflective of the communities that you are learning with. Elicit and highlight the ways children and their families engage with astronomy and planetary science in their everyday lives. Both elicit from children and families and highlight the cultural significance planetary science has had for communities throughout time.

Meet the audience where they are (and in this way invoke an asset-based approach), working with locations and people that they already know and have a relationship with, rather than expecting them to go to a new place – there are barriers of experience, transportation, and lack of familiarity that may make their participation less likely or less enthusiastic.

Demonstrate relevance of activities to participants’ lives and build connections to the audience’s culture and incorporate examples from diverse cultures in programs.

Try to create experiences that involve real-world problems. Connect relevant local issues with planetary issues. For instance, if the participants are concerned with water pollution or scarcity, connect to the challenges and solutions of designing human space travel and human missions on the Moon and Mars. For example, during a virtual program about the Moon’s formation and evolution, invite community members to share their observations of the Moon and the stories they heard about the Moon as a child. Incorporate home language into activities (if possible) and avoid pressuring youth to assimilate. For example, invite children whose households speak Spanish to help identify how the names of the Moon and planets are present in the Spanish days of the week: Lunes (Moon), Martes (Mars), Miércoles (Mercury), Jueves (Jupiter), and Viernes (Venus), then share that English has similar connections that include Saturday (Saturn) and Sunday (Sun).

Supplementary Reading

Culturally Relevant Teaching

Our societies and hence our classrooms are getting more diverse not just culturally, but racially, ethnically, economically and religiously. This diversity helps bring different perspectives but also many challenges in meeting the needs of all students. Culturally relevant teaching is a proposition that supports and encourages teachers to ask about the nature of a student-teacher relationship, to their curriculum, schooling, and society by
understanding their students’ multiple identities (Ladson-Billings, 1995) whereas culturally responsive teaching is a broader concept which focuses on the larger multiculturalism found among the students and in the classroom (Gay, 2018). So together, culturally relevant and culturally responsive teaching are so interested in both instructors and students gaining an understanding of social, political and historical knowledge in learning science for the academic improvement of BIPOC students (Black, Brown, and Indigenous People of color). The main teaching strategies and science curriculum implemented should offer students “multiple opportunities to access, gain and use significant knowledge and skills while also inviting their knowledge and skills into enhanced science learning” (Mensah, 2021).

**Funds of Knowledge**

Funds of knowledge refers to the cultural and personal knowledge that learners have accumulated over the course of their lives and cultural histories (Moll et al. 1992). For learners who come from immigrant backgrounds, this includes multicultural knowledge that crosses geographic borders, giving them experience with multiple cultures and the ability to compare between them (Kwon et al. 2019).

Funds of knowledge is an important aspect of culturally relevant teaching since it specifically focuses on the knowledge that learners bring to the classroom from their outside lives. When educators notice and make use of learners’ funds of knowledge, they are able to place learners at the center of learning (Snyder & Fenner 2021 principle of culturally responsive education, #4) and engage in diverse sense-making (Shwartz et al. 2017).

**References**


Alberta Civil Liberties Research Centre, Calgary Anti-Racism Education, Racialization page. [https://www.aclrc.com/racialization](https://www.aclrc.com/racialization)


