

Public Engagement Reflective Practices

Strategies for Inclusive and Accessible Physics Public Engagement



Terminology

Informal physics education (IPE) & Public engagement (PE)

- Physics education outside formal education structures
- Wide range of activities where facilitators & participants are **mutually engaged** in exploring physics phenomena and topics; emphasis is on **curiosity** and **excitement**
- Similar term: **outreach**
- Historical use of “outreach” (implied one way, often hierarchical interaction)
- We use informal physics education and public engagement (to better capture the mutual interaction that characterizes these activities)

Guiding principles

Public Engagement at American Physical Society (APS)

supports aligning with the following guiding principles

when planning public engagement opportunities:



1. **Partnership and mutual engagement:** Foster long-term collaborations rather than one-time visits to build sustainable relationships and community confidence.
2. **Listening and trust:** Essential foundations for understanding and effective communication.
3. **Reflecting and evaluating:** Regularly assess the impact of your initiatives and make iterative improvements.
4. **Equity and inclusion:** Ensure that all activities, policies, and programs are accessible and inclusive to diverse participants.

Guiding Questions

When designing informal physics education experiences that are inclusive, accessible, and meet the needs of everyone involved, it is best practice to consider these guiding questions before you begin.



Have you...

Purpose - Have you...

- ☐ Identified the need for a public engagement event or program?

Participants and collaborators - Have you...

- ☐ Identified participants?
- ☐ Considered the needs, goals, and prior experiences of your participants?
- ☐ Identified collaborators or potential collaborators? (including volunteers)
- ☐ Considered the needs, goals, and prior experiences of your collaborators?
- ☐ Identified what you hope to learn from the participants?

Inclusion and Equity - Have you...

- ☐ Identified ways to make your event inclusive and welcoming?
- ☐ Determined to implement culturally responsive practices into your program or event?

Evaluating outcomes - Have you...

- ☐ Set goals and outcomes for your event or program?
- ☐ Considered how to measure these outcomes?
- ☐ Determined which metrics and data to collect and how to do this equitably?
- ☐ Established how feedback will be used to guide future events or programs?
- ☐ Considered how to document your event or program for future reference and learning?

Planning Strategies - Have you...

- ☐ Defined the content, strategies, and format for your event or program?
- ☐ Tested engagement strategies, content, or materials?
- ☐ Communicated and advertised the event for your participants and collaborators?
- ☐ Prepared for any risks or contingencies for your event or program?

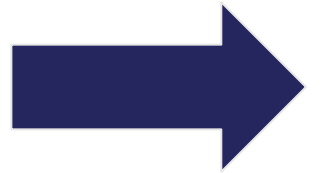
Resources and Venue - Have you...

- ☐ Identified available and needed resources?
- ☐ Chosen a venue for your event based on your participants and collaborators needs?
- ☐ Considered all accessibility needs for your participants and collaborators?

Have you...



Identified the need for a public engagement event or program?



When planning a public engagement event or program, it is essential to consider how the community's needs and interests fit with your own. Reflect on your goals, interests, and purpose for organizing a public engagement program as well as the context and needs of the community in which it will take place.

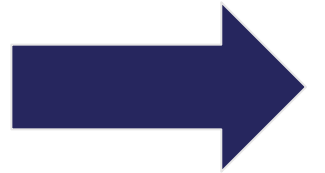
Have you...



Identified participants?



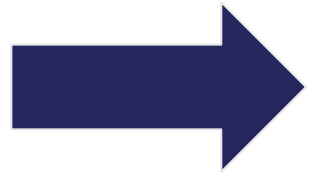
Considered the needs, goals, and prior experiences of your participants?



Strive to understand not only what your participants know about your topic, but also to connect to their lived experiences. Intentionally listen to your partners to deeply understand their needs and perspectives, creating a collaborative environment to achieve mutual goals.

Have you...

- ✓ Identified collaborators or potential collaborators?
- ✓ Considered the needs, goals, and prior experiences of your collaborators?

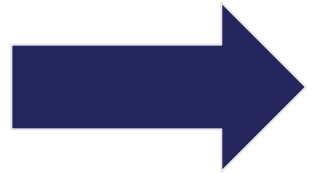


Look for existing local organizations and individuals already engaged in your community as potential collaborators and volunteers. Partner with teachers, museum educators, librarians, etc. to avoid the pitfalls of the “drop-in” expert model and to support culturally responsive engagement.

Have you...



Identified what you hope to learn from the participants?



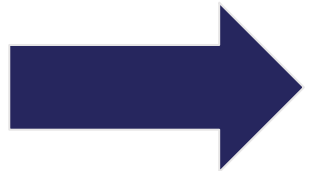
Public engagement is multidirectional – events and programs can help support physics research and improve scientists' communication skills. Recognize that participants contribute their own knowledge and perspectives.

Stop and check for alignment



Do your goals align with those of your partners and your participants?

If you answered “yes,” it is likely that you have successfully identified the purpose of your public engagement event or program. If not, what changes would you need to make to YOUR goals in order to bring them into alignment?



Have you...



Identified ways to make your event inclusive and welcoming?

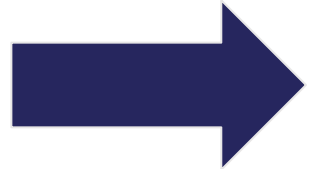


Thoughtful science communication is a co-creative process that can remove traditional barriers between the “scientist” and the “public.” Use clear, simple language and avoid jargon. Define complex terms clearly the first time you use them. Engage with the participants through storytelling, analogies, and visually appealing materials that prioritize making complex concepts relatable and understandable.

Have you...



Determined how to implement accessible and culturally responsive practices?



Consider who is represented in your materials and your team, and who is not. What examples will you draw on and what cultural knowledge do those examples assume of the participants? Providing access to content is not enough to remove barriers for people who have been historically marginalized in science. Apply [universal design for learning \(UDL\) principles](#) and culturally responsive practices to support your planning process.

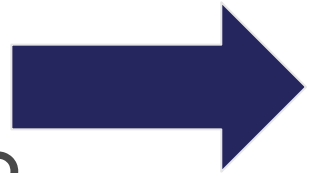
Have you...



Set goals and outcomes for your event or program?



Considered how to measure these outcomes?



Define your intended impact to guide the format of engagement you are planning - whether it is an after-school program, interactive activity at a science festival, or science series at your local library.

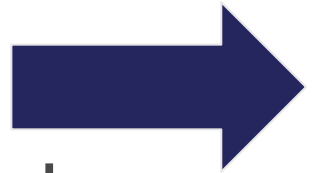
Have you...



Determined which metrics and data to collect and how to do this equitably?



Established how feedback will be used to guide future events or programs?

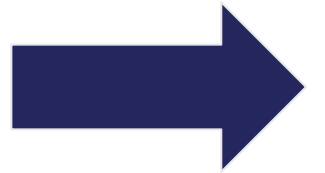


Decide what resources or tools you will need to be successful in gathering and analyzing data.

Have you...



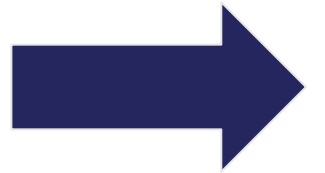
Considered how to document your event or program for future reference and learning?



Whether or not you share or publish the outcomes of your event or program, it is useful to have documentation you may refer to when planning for the future. Consider sharing your successes and failures within your community to support future public engagement initiatives.

Have you...

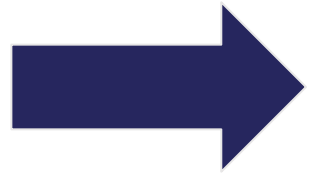
- ✓ Defined the content, strategies, and format for your event or program?
- ✓ Tested engagement strategies, content, or materials?



Integrate your objectives with local or state educational standards, connect with community partners to participate in their events, and work with collaborators who are locally or regionally established. They have great ideas about what works in the context of your community.

Have you...

- ✓ Communicated and advertised the event for your participants and collaborators?
- ✓ Prepared for any risks or contingencies?



Whenever possible, align your activities with existing educational programs and systems - they will often have marketing strategies and contingency plans already in place.

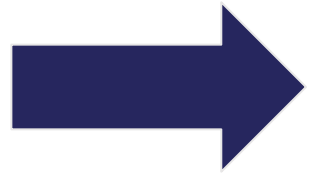
Have you...



Identified available and needed resources?



Chosen a venue for your event based on your participants' and collaborators' needs?

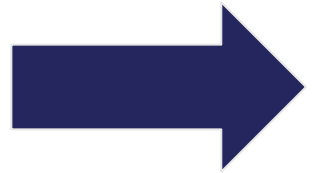


Clearly identifying needed resources is a good way to open the door to engagement with potential funders and donors. Be sure to communicate with your collaborators to finalize these requests.

Have you...



Considered all accessibility needs for your participants and collaborators?



Consider if all participants and collaborators will be able to say, “I can use this resource to its fullest potential. I can see myself represented. My needs are anticipated and accommodated.” There are many forms of accessibility to consider, including mobility, cognitive, economic, and temporal accessibility.

[The Universal Design for Learning \(UDL\) Guidelines](#) are an evidence-based framework to help support your accessible design.

Additional Info?

Questions? Please contact APS Public Engagement at public-engagement@aps.org.

Want to learn more about the principles and practices in this checklist? Check out this article: [Fostering connection: Principles and practices for well-designed public engagement in physics](#)