

QUARKNET: CHANGING THE CULTURE

WORKSHOP LEADER NOTES

DESCRIPTION

Everyday Actions Activity “includes strategies for reducing marginalization in the classroom and recognizing students as physics people.”

BEST PRACTICES

Strategies to Model Good Teaching Practices

- Provide context for the workshop; provide the “big picture” up front.
- Lead as a facilitator rather than a lecturer.
- Focus on habits of mind and on the process of science; teach science as science is done.
- Focus on active engagement over slides.
- Use guided inquiry: Participants practice data collection, organization, interpretation as scientific process.
- Provide opportunities for participants to support their claims with evidence (Claims-Evidence-Reasoning).

Workshop Characteristics

- Workshops include a balance of scientific content and process.
- Workshops have an agenda:
 - Prepare agenda in advance with participants’ prior experience in mind, if possible.
 - Build in agenda flexibility.
 - Leave time for reflection and discussion.
 - Place workshop agenda online.
- Participants are actively engaged.
- Participants work through activities as if they are students first (“student hat”), then talk about teacher strategies and implementation plans (“teacher hat”).
- Activities progress from simple to complex.

Resources for Further Reading:

[*Criteria for Workshop Review*](#) (Young & Associates, 2014)

[*Principles of Effective Professional Development for Mathematics and Science Education: A Synthesis of Standards*](#) (Loucks-Horsley, Susan et al., 1996)

Bibliography

The National Center for Improving Science Education, *Profiling Teacher Development Programs*, Washington, DC, 1993. [Note: Developed for DOE teacher development programs]

National Research Council, *A Framework for K–12 Science Education: Practices, Crosscutting Concepts, and Core Ideas*, Washington, DC: The National Academies Press, 2012.

ENDURING UNDERSTANDINGS

The culture in your classroom has a great impact on student lives and career choices.

LEARNING OBJECTIVES

Teachers will know and be able to:

- Explain the meaning of each of the Guidelines for Conduct During Discussion.
- Determine the everyday actions they struggle to implement.
- Determine the everyday actions they implement successfully.

- Develop a classroom plan for improved implementation of Everyday Actions.

PRIOR KNOWLEDGE

None required.

BACKGROUND MATERIAL

Information about the STEP UP Everyday Actions curriculum:

<https://engage.aps.org/stepup/curriculum/everyday>

RESOURCES/MATERIALS

Teachers will have access to the following documents:

- Changing the Culture: Workshop Leader Version slides
- Guidelines for Discussion Student Questions
- Everyday Actions Self-Reflection
- Everyday Actions to Inspire the Future of Physics
- Everyday Actions Teacher’s Edition, June 2019

IMPLEMENTATION

Using the *Changing the Culture: Teacher Workshop Leader Version* slide deck:

TASK 1: Participants go through the student activity to develop an understanding for the *Guidelines for Student Discussion*. Encourage teachers to approach the activity wearing their “student hat.”

Divide participants into groups of two or three and assign each group a guideline. (If the number of participants is small, then assign each group multiple guidelines. Allow extra time as needed.) Use the *Guidelines for Discussion Student Questions* to share ideas within groups. Ask each group to prepare a poster or slide for the whole group and present their responses. Lead a whole group discussion about the value of using these discussion guidelines in a classroom setting.

TASK 2: Participants approach the activity wearing their “teacher hat.” Individually, teachers complete the *Everyday Actions Self-Reflection*. The slides provide questions for small group discussion. Lead a whole group discussion before going to the next slide.

TASK 3: Participants continue with their “teacher hat.” Use the *Everyday Actions to Inspire the Future of Physics Teacher Questions*. The *Everyday Actions Teacher’s Edition, June 2019*, provides a detailed description of each everyday action along with sample dialogs with students. Assign each group an everyday action. Groups review and summarize the materials for their everyday action. Lead a whole group discussion.

End with time for teachers to reflect and develop an implementation plan for their classrooms.

ASSESSMENT

This activity lends itself to formative assessment in which the teachers are encouraged to gather after implementing the student activity in their classroom. Return to the questions in the original slides. Follow up with the following questions:

- What went well during implementation?
- What would you do differently if you do it again with a different group of students?
- Have the students followed the guidelines during classroom discussions?
- Has the climate changed in the classroom?
- Do more students share their thoughts and answers with the class?