Nuclear In Action

Presentation Instructions for Volunteers

Overview

Nuclear in Action is a program designed to increase community engagement concerning nuclear science and technology in the region surrounding the Savannah River Site. Our key audiences are women, young people and minorities. This program is supported through the Community Involvement Fund, and implemented by the Nuclear Literacy Project, the Savannah River Site Community Reuse Organization and Citizens for Nuclear Technology Awareness.

Modules

"Nuclear in Action" is a series of Prezi presentations designed for young people ranging from middle school to college aged:

- All presentation will include the "Nuclear in Action" module, and specialized groups may also include additional technical modules on: Nuclear Medicine, Nuclear Fuel Cycle, Nuclear Technology or Nuclear Safety and Security.
- Before your presentation, review the group/organization that you will be presenting to, and choose the most relevant modules for your group.
- In the days leading up to your presentation take some time to familiarize yourself with the modules. Click through several times to get comfortable with the Prezi format and the module content.

Evaluation

At the beginning of your session hand out the evaluation form that asks the participants what thoughts/ideas/images come to mind when they hear the word "nuclear'. At the end of the session ask them to flip the paper over and answer the same question again. These will serve to help us identify the ideas and information the participants are most responsive to.

Nuclear in Action: Step by Step Instructions

The steps listed below are a basic framework for the Nuclear in Action Module. Volunteers are encouraged to share additional information or anecdotes to personalize each presentation. The presentation has several components beginning with the history of SRS, current programs at SRS, commercial electrical energy generation in the region, education and career opportunities, and general uses of nuclear technology.

Slides:

1. Introduce yourself and share a little about your professional background. Make sure everyone has finished his or her initial evaluation form.
2. Explain the framework of the program and acknowledge all of the organizations involved: This program is supported through the

Materials

For each classroom visit please bring a laptop or jump drive with the Prezi presentations already loaded, as well as art supplies for the "Anatomy of an Atoms" painting project:

- Laptop or USB jump drive with Prezi preloaded
- Evaluation forms
- Canvas or paper for each student
- Paint
- Brushes
- Paper plates & cups

Other Resources

- We will work with volunteers to make sure that you have access to a projector, and that you have accurate directions to your location.
- Please arrive at least 30 minutes early to set up.
- Web addresses and additional information on regional education and job opportunities.

Community Involvement Fund, and implemented by the Nuclear Literacy Project, the Savannah River Site Community Reuse Organization and Citizens for Nuclear Technology Awareness. This program is not funded by or affiliated with the Savannah River Site.

3. Ask if any of the students have heard of SRS. Listen to their responses and let them know when they respond correctly. Read through the brief history of SRS.
4. Explain that the mission on SRS has evolved over time.
5. Read through recent history page.
6. Read through current programs.
7. Read through ways to get involved.
8. Explain that nuclear technologies are not just used at SRS, but are also used in electrical generation in our region.
9. Explain that a significant proportion of our electricity in the region comes from nuclear.
10. Read through the economic impacts of nuclear electricity in our region.
11. Read through educational opportunities for nuclear careers (first slide is newer programs).
12. Read through additional educational programs in the region.
13. Read through the types of jobs available in the nuclear sector- be sure to explain that some require certificates, 2 year degrees, 4 year degrees or advanced degrees depending on the career, so there are opportunities for many types of people with different backgrounds and educational levels.
14. If students are interested in learning more, they can jot down the web address for SRSCRO, which has job information. You will also pass out this info at the end of the session.
15. Explain that nuclear technologies and radiation are very commonly used in our ever day lives. If you wish, you can first ask the students what they know about each of the featured technologies before offering an explanation to increase engagement.
16. Explain uses of nuclear medicine, including: diagnostics, treatment and sterilization.
17. Explain the uses of X-ray technology in manufacturing for quality control of automobiles and planes.
18. Explain how X-rays are used to monitor security in airports and ports, and radiation detection is used in nonproliferation efforts.
19. Explain how we use Americium in smoke detectors. Point out the smoke detector in the room if you can. You can also mention the Plutonium battery in the Mars Rover as another unexpected example of nuclear technology use.
20. Explain the many foods are naturally radioactive, and that we use irradiation to extend the lives of foods and reduce food borne illness. Make sure to mention that food irradiation does not make food radioactive, it simply kills pathogens.
21. Explain how carbon dating has allowed us to better understand history through archeology and geology.

Activities

After the "Nuclear in Action" module, there is an option to lead the "Anatomy of an Atom" painting project. These simple steps will ensure a successful art project:

- Display the example atoms on the screen (final slide of "Nuclear in Action" Prezi).
- Hand out a canvas to each student.
- Hand out paper plates with paint and cups of water, as well as brushes.
- Ask the students to paint the background of the canvas first, leaving no white spaces.
- Guide the students as they paint. Explain the different parts of the atom, including: the nucleus- protons, neutrons- and electrons.
- Finished artwork can stay with the students or hosting organization.

Additional Technical Modules

For some groups it will be appropriate to offer an additional technical module. The available modules are: Nuclear Medicine, Nuclear Fuel Cycle, Nuclear Technology or Nuclear Safety and Security. Like the "Nuclear in Action" module, we suggest that volunteer take the time to familiarize themselves with the material in advance. Volunteers should follow the text of the modules, adding in appropriate additional information or anecdotes.

Conclusion

Ask your participants to fill out the evaluation form again after the presentation(s). This will help us evaluate the effectiveness of the program. Be sure to thank your participants and offer your contact if appropriate.

This program is supported by the New Mexico Community Foundation and the US Department of Energy Office of Environmental Management through a cooperative award #DE-EM0000673/Grant #2013-8382.