

Session 8

Community Resources and Engagement



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Session 8

Community Resources and Engagement

Objectives

1. Participants will discover and share how community resources can be used to enhance and integrate mathematics, science, and technology in classroom instruction.
2. Participants will build a common database and presentation of community resources that can be shared and used to enhance instruction.
3. Participants will explore classroom applications that can utilize community resources.

Facilities

- A room with Internet access, a data projector, speakers, tables, and space for participants to spread out in groups and work comfortably
- Electricity as required for powering participants' computers

Equipment/Materials

- Computer with Internet access and data projector for facilitator
- Laptop computers with Internet access (1 per participant)
- Chart paper, chart stands, and markers

Software

- Presentation software (optional)

Computers should also have current installations and updates of

- Java
- QuickTime
- Flash



Participants
Up to 25 teachers



Time Required
6 hours

Handouts

- 1: Utilizing Community Resources
- 2: Discovering Community Resources
- 3: Group Resource List
- 4: Planning for Community Engagement

Facilitator Preparation

- Read the session guide and familiarize yourself with the activities and handouts 1–4.
- Copy handouts 1–4 and upload the files to Google Docs for participant access during the session.
- Conduct preliminary Internet research to create a list of local community resources. Bookmark websites to use as examples of viable community resources.
- Prepare a chart like the one found in Step 7 for the whole group to see. You might create the chart on chart paper or on your computer and use a data projector to present it.
- Ensure adequate numbers of materials for all participants and groups.
- Review the BSCS 5Es Instructional Model (see Session 1: Handout 1).

Prerequisite Skills of Participants and Facilitator

- Basic computer skills
- Basic understanding of Web navigation
- Basic understanding of the local community

Grouping Strategy

Use a heterogeneous grouping strategy. To the extent possible, each group of three to four members should be from the same school and include a diversity of expertise in science, math, and technology.



Session Sequence

Teachers may have access to useful but untapped resources in their communities. Many communities have expertise and resources via local individuals, businesses, or organizations that can improve and enhance mathematics, science, and technology instruction; therefore, awareness and access to these sources is the focus of this session.

Working primarily in groups, participants will engage in tasks that focus on the discovery and the subsequent utilization of community resources for science and mathematics instruction. Groups will collaborate using Internet communication resources such as Google Docs to compile the gathered information, which will in turn become a shared database of community resources. Participants will also discuss upcoming topics of instruction and how they can effectively use appropriate community resources in a way that will increase student learning. To make building the resource list an ongoing process, a new section will be added to the master resource list where the participants can input the resources they use to enhance instruction, including details regarding how they used them.



Equipment/Materials

- Notepaper and writing utensils for each participant

Individuals

1. Ask participants to think of a time they made use of or met with an expert about a topic they were studying, teaching, or had interest in.
2. Instruct participants to write down the name of this person or the expertise he or she had. In addition, ask participants to write down how this experience enhanced their understanding of the topic.

Whole Group

3. Ask for two or three volunteers to share their experiences and how the experts enhanced their understanding of a topic.
4. Ask for some examples of experiences that were not as beneficial as anticipated and why.



Table Groups

5. Instruct participants to form groups of three to four members. If possible, the groups should be from the same school and include expertise in science, math, and technology. Plan for a 3-minute transition from whole group to table groups.

Equipment/Materials

- Computer with Internet access and data projector for facilitator (optional)
- Laptops with Internet access (1 per participant)
- Chart paper and markers
- Handout 1: Utilizing Community Resources (1 electronic copy per participant)
- Handout 2: Discovering Community Resources (1 electronic copy per participant)

- Ask the groups to brainstorm and develop a list of community resources that are commonly accessed as well as a list of those that are less apparent or less often utilized. Participants should also note what content each community resource or expert would enhance; for example, an architect could talk about the need for accurate measurements in the design of houses to enhance a mathematics lesson.

Whole Group

- Prepare a chart like the one below that the whole group can see. Include the example provided. You will use the chart to collect the groups' information on common and unusual community resources and connections.

Community Resource	Connection
Architect (home builder)	Accurate measurements and design that will survive the weather of the region (e.g., weight of snow on a roof)

- Ask the groups to share the community resources they listed. Add each resource to the chart.
- Encourage the groups to use and add to this list as they move into the next part of the session.

Table Groups

- Give each participant an electronic copy of Handout 1: Utilizing Community Resources. Ask the participants to use the handout for taking notes and recording their information.
- Give the groups 20–25 minutes to complete the task on the handout and record their information. As an example of the expectations, refer back to the garden weed control problem in Session 3. A community resource that could be utilized in that context would be an expert that works in a local nursery or someone from a local farm bureau.
- Build on the example by adding that the weed control experiment could be extended to the task of planting and maintaining a garden, which could include a myriad of factors, such as fertilizer, growth rates, and recipes using the garden's products. Community resources that could be utilized range from a local horticulturalist to an agricultural extension service agent to the manager of a grocery produce section.

Whole Group

- Ask a spokesperson from each group to report out to the whole group.
- The facilitator or a volunteer should record the new ideas on the chart started in Step 7.

Individuals

- Give each participant an electronic copy of Handout 2: Discovering Community Resources. Review the task instructions and data recording tables. Emphasize to participants that this chart will become

a shared resource database, so it is important to provide detailed information in the right column so that others in the session will know the expertise and how it might be utilized.

Each group may want to assign one member a different category on the chart to complete. Each participant should then make notes on his or her own handout.

16. Give participants about 1 hour to conduct Internet research to locate contact information for the community resources.



Table Groups

17. Provide each table group with an electronic copy of Handout 3: Group Resource List.
18. Explain that each group will collaborate using Google Docs to compile members' community resource lists (Handout 2) into one master team file (Handout 3).
 - a. Each participant should access the Google Docs account created in Session 6 or earlier.
 - b. A selected team leader should upload Handout 3 in the Google Docs format and share the file with the other team members.
 - c. Each member should access the shared file and record his or her information from Handout 2.
 - d. Each team should then review and discuss the compiled file, and the team leader should make final edits.

Equipment/Materials

- Laptops with Internet access (1–2 per group)
- Handout 3: Group Resource List (1 electronic copy per group)

Whole Group

19. Ask each group to share one of its community resources with the whole group. Start with the first category, Local Agencies/Government, on the handout. As each group reports out, ask the whole group for additional comments regarding how that particular resource can be used. A recorder for the reporting group should type in the suggestions on the group's compiled list (Handout 3).
20. Continue until none of the groups have any more resources to report for the Local Agencies/Government category.
21. Repeat the process for the rest of the categories:
 - a. Local Business
 - b. Local Professionals/Experts
 - c. Local Organizations/Groups/Institutions
 - d. Other
22. Provide additional time as needed for the recorders to finalize Handout 3.



Table Groups

23. Explain that participants will now plan how they will use a community resource in the integrated units they began developing in Session 7.
24. Ask the participants to identify a community resource that would enhance instruction and student learning.
25. Have the groups discuss and plan how each member can effectively use the community resource in a way that will increase student learning and maximize the time the community member will be asked to donate.
26. Give each participant an electronic copy of Handout 4: Planning for Community Engagement. Briefly identify the considerations for before, during, and after a community member works with students.
 - a. Before the visit
 - i. Identify the content to be highlighted.
 - ii. Visit with the person to communicate what you are looking for.
 - iii. Schedule a time that works for both the expert and the students (may do this step by telephone, Skype, or in person in the classroom or at the community site).
 - b. During the visit
 - i. If possible, arrange the room or site to maximize the students' view of the expert.
 - ii. Explain student expectations.
 - iii. Discuss possible questions students may have for the expert.
 - c. After the visit
 - i. Discuss with the students what they learned related to the content.
 - ii. Ask what else students learned.
 - iii. Send a thank you card/letter from the students to the visiting expert; the letter may also refer to what the students learned.
27. Ask the groups to consider the community resources they have identified and discuss how to address the considerations listed on Handout 4.
28. Provide approximately 2 hours of sheltered time for the table groups to continue development of the integrated unit begun in Session 7. Remind participants—and post on the wall or on a projector screen—the following components that the units should contain:
 - BSCS 5Es Instructional Model (Session 1 handout)
 - Video (Session 3)
 - Outdoor learning experiences (Session 3)
 - Web research (Session 4)
 - Assessment rubric (Session 5)
 - Online collaboration—blog (Session 7)
 - Community resources (Session 8)

Equipment/Materials

- Laptops with Internet access (1–2 per group)
- Handout 4: Planning for Community Engagement (1 electronic copy per participant)



Evaluate

Whole Group

29. Ask each group to present the community resource(s) it identified and how the resources connect to instruction. Ask the reporters to avoid a complete unit report since time will be provided the next time they meet for a full report.
30. After each group presentation, ask the whole group to share any additional considerations or content connections that may be useful.
31. **Reflection.** Ask each team leader to ensure that the group's most recent compiled resource list is on the facilitator's Google Docs.
32. Announce that all the participants will have access to the session's master resource list for future reference and collaboration.
33. Remind the participants that this list should not become stagnant. Everyone should continue to add new resources to the master list.
34. Announce that a new section will be added to the master resource list where the participants can input what resources they have used to enhance instruction, including details regarding how the resources were utilized.
35. In addition, ask the group members to implement and teach the units they designed before the next session. Each group will be responsible for providing an overview of its unit and a self-evaluation of how well members met their instructional goals.
36. Ask for any final questions or comments.

Equipment/Materials

- Laptops with Internet access (1–2 per group)
- Chart paper, stand, and markers

Technical Assistance Follow-Up

The technical assistance provider will take the information from Handout 3 for each team and within 3 days contact all team leaders to set up a tentative schedule for follow-up actions. Depending on the team needs, the follow-up should include the following:

1. Check if participants have any new resources to add to the master list.
2. Provide assistance regarding how to use local community resources in instructional unit design and development.
3. Assist and answer any questions dealing with the instructional unit design and development.
4. Provide technical assistance in the implementation of portions of the unit, such as classroom observation.
5. Provide assistance with post-lesson activities, such as reviewing student work and meetings to reflect on content and/or pedagogy.



Texas Essential Knowledge and Skills (TEKS)

The TEKS utilized for mathematics, science, and technology are dependent on the local resources utilized and the topics chosen by school teams for the instructional units in development.

References

Bybee, R. W., Taylor, J. A., Gardner, A., Van Scotter, P., Carlson Powell, J., Westbrook, A., & Landes, N. (2006). *The BSCS 5E Instructional Model: Origins, effectiveness and applications*. Retrieved from <http://www.bscs.org/bscs-5e-instructional-model>

