Professional Development Situation: Training

Skill Focus: Creating STEM Learning Environments

Time Required: 75 minutes

A CHALLENGE IN SPACE

Participants will design a model learning environment in order to create physically safe and productive STEM learning spaces.

Agenda

Welcome—5 minutes
Introduction—15 minutes
Hands-On Learning—40 minutes

- Learning Environment Design Challenge

Conclusion—15 minutes

Materials

- Computer with Internet connection
- Projector and speakers
- Flip chart and markers
- Pencils for participants
- Blank paper for each participant
- Materials for Learning Environment Design Challenge
    - Learning Environment Design Template for each group of 4
    - 8 marshmallows for each group of 4
- Optional: construction paper, pipe cleaners, etc. to make a diorama of the learning space

Before the Session

- **Read this training guide** to become familiar with the content and allow time to personalize the activities to best suit your presentation style. Watch all videos and read informational materials.
    - *Italics indicate text that can be read aloud or emailed to participants.*

- Send reminder email about the training. Determine if any participants require accommodations (sight; hearing; etc.).
    - *The next professional development opportunity to enhance our STEM skills will be on DATE at TIME at LOCATION. Our focus for this session will be "Creating STEM Learning Environments". Let me know if you require any accommodations to participate in the training. I am happy to answer any questions you have and look forward to seeing you at the workshop. I can be reached at CONTACT INFO.*
- Gather all materials needed for the training.
- Develop a list of possible questions participants might have during the training. Create potential responses to be explored through informal conversation. Review any key terms or ideas that may be unclear.

Training Outline

Welcome (5 min)

- Greet participants as they arrive. Make sure everyone feels welcome and comfortable.
- Introduce yourself and the focus of the session: "Creating STEM Learning Environments".
- Ensure participants are aware of the locations of restrooms facilities, refreshments, etc.

Introduction (15 min)

- Do a "snowball fight" to help participants get to know each other.
- Pass out a piece of plain white paper to each participant.
    - *Before we get started, let's do an activity that can help us get to know each other better and get up and move around.*
    - *On a piece of white paper, write your name, where you are from (your site) and write three things about yourself. Crumple that up into a "snowball." When I say go, throw it across the room as far away from yourself as you can. If "snowballs" land near you, pick them up and toss them as far away as you can. Please do not throw them at each other. When I say stop, pick up the nearest "snowball" you can find, open it and read it. Now, go and try and find the person who wrote it and get to know each other. Notice how far away or close the "Snowballs" traveled!*
- If time permits, have people toss their snowballs a second time.
- **Note**: If your participants know each other already, have them write one of their favorite places to learn STEM.
- Have participants share something they learned from their colleagues.

- *Thanks for doing that activity. What did you learn about each other from this activity?*
- *Why do you think having an engaging creative STEM learning space is important?*
- *Do you think youth notice an engaging STEM space?*

Hands-on Learning (40 min)

- For this portion of the training, the participants will be designing a learning environment template and/or diorama.
- Get participants into groups of four. Consider using this active grouping strategy:
  - *I want you to think of what will get you moving around the room. It could be singing and walking (or moving), skipping, or pretending you are an airplane and flying around the room – everybody gets to decide how to move around the room.*
  - *I am going to shout out a number, so be listening. When I say that number, get in a group of that number size, as quickly as possible. When you have the same number of people in your group that I shouted, get in a circle. Each time you form a group, try and get with new people*
- Introduce the challenge.
  - *Today, you are going to design the perfect learning space for eight "mini" students, represented by mini-marshmallows.*
  - *Criteria for success: it should include seating, room for movement, and access to materials, access to water, two wired computer stations, at least one plant, and a place for youth to leave their backpacks and coats, and a way to charge iPads while youth are working on them.*
  - *The lightning bolts represent electricity plug-in points.*
  - *You cannot add plumbing.*
  - *Optional: include coins as a 3D government-approved bust of a president*
- Allow time for groups to work.
- Stop the groups about 10 minutes into design to ask them about safety concerns they might be having.
  - *Are cords going to be strung across the floor?*
  - *Are youth going to be able to collaborate? (Emphasize tables v. desks facing the front)*
  - *Will water be near any electrical outlets?*
  - *How will the teacher computer be configured?*
  - *Where will the wifi router and modem be?*
  - *Are there any spaces that might be too crowded?*

- Allow more work time.

Testing

- Have each group share their design with the rest of the room through a gallery walk. Have one person stay at each table and three "stray" or look at others' designs.
- **Optional**: after this step, allow for one more round of design work.
- Compliment participants on the creative and innovative designs they've made.
- Debrief the learning space design activity.
    - *Was it hard to design your space with the limitations of materials and challenges? Why? Why not?*
    - *What did you like about this activity?*
    - *What insight did the activity give you about your learning space?*
    - *What makes a good STEM learning space?*
    - *We may feel challenged with limitations of our spaces, but what did this activity show us we could do with those challenges?*

Conclusion (15 min)

- *How did we maximize our space in this room today? (Possible responses: Maximized space - We had a snowball fight, danced/sang/moved around the room, and used our space in the activity.)*
- *When we collaborate together and rise to the challenges, we can create a creative, innovative, safe, STEM-rich space for youth!*
- Conclude the day with a reflection.
    - *Take a piece of paper and write your name on the back. On the front, write in big letters for sharing one thing you will take away from today. Hold that paper in front of you. Let's all look around the room. As you read what others are saying, some of you say out loud the one thing that you can relate with.*

After the Session

- Within 2-3 weeks of the training, email to all participants.
    - *Thank you for your participation in the recent Click2Science training on creating STEM learning environments. I hope you found it useful. Consider meeting with a co-worker, supervisor, or friend to share what you learned. I look forward to continuing our learning at the next session on SKILL/FOCUS on DATE at TIME at LOCATION. Please let me know if you have any questions. I can be reached at CONTACT INFO.*

Want to Earn Credit? Click2Science has teamed up with Better Kid Care to provide continuing education units. Check it out at: http://www.click2sciencepd.org/web-lessons/about

Learning Environment Design Template