Professional Development Situation: Meeting

Skill Focus: Enabling Active STEM Learning

Time Required: 25 minutes

MAKE IT ACTIVE

Participants will review strategies to get youth actively doing STEM in order to add more active learning opportunities to their program.

Agenda

Active Learning Strategies—10 minutes

- Active STEM Learning Strategy List

See the Skill in Action—10 minutes

- Getting in the Water video-based learning module

Conclusion— 5 minutes

Materials

- Computer with internet connection
- Projector and speakers
- Pens for participants
- Getting in the Water video-based learning module
- One copy of Active STEM Learning Strategy List for each participant
- Optional: whiteboard or flip chart paper

Before the Session

- **Read this meeting 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 meeting. Determine if any participants require accommodations (sight; hearing; etc.).

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- o *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 supporting "Active STEM Learning". Let me know if you require any accommodations to participate in the meeting. 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 session.
- Develop a list of possible questions participants might have during the meeting. Create potential responses to be explored through informal conversation. Review any key terms or ideas that may be unclear.
- On the day of the meeting, test the audio and video equipment.

Session Outline

Introduction

- Greet participants as they arrive. Make sure everyone feels welcome and comfortable.
- Introduce yourself and the focus of the session: "Enabling Active STEM Learning"
  - o *Today we are working on making our learning environments more active. This means getting youths' minds and hands engaged in the learning. In particular, we'll focus on ways to make passive learning more active.*

Active Learning Strategies (10 min)

- Pass out the Active STEM Learning Strategy List to each participant.
- Ask participants to read the "active" strategies list and think up 2-3 more strategies to go in each section. They should work in pairs or groups of three.
  - o Possible responses: create an audio recording as a summary of something they read; pair-share to tell a partner about the instructions for an activity.
- Give participants time to think about what other hands-on, minds-on modifications they can make to typical passive learning moments.
- Share modifications as a whole room.
  - o *We're going to share a few strategies now, but everyone else can listen and steal a great idea. (Note: This is an active learning strategy on its own – "stealing" great ideas to write down or remember because it encourages youth to actively listen and incorporate new ideas. It's a "minds-on" activity related to listening.)*
  - o *Can someone share a few of their strategies?*
- Have participants star one or two strategies they want to try right away.

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See the Skill in Action (10 min)

- Participants will now review active approaches to learning while watching a video and actively note when active approaches are seen in action.
    - *What do you think about watching a video? Is that an active or passive strategy? (Passive)*
    - *What if you take notes during the video so we can discuss something of interest? (Active)*
- Cue up the Getting in the Water video-based learning module.
    - *This is a video of real practice, not necessarily perfect practice. In it, youth go outside to do observations of their environment.*
    - *You will make notes when you see youth actively engaged in science learning. We will talk about what you see and add to our list of strategies afterward. Everyone ready?*
- Watch the activity overview video. Allow participants to share their thinking. Watch the video in step 3 as well.
    - Note: *The instructions section of this video is still fairly teacher-directed; youth are just listening passively. How could this activity better encourage youth to get involved in designing the investigation? Let's see if we can list five ways to make this more youth-centered.*
- Debrief the video and strategies together.
    - *Think about outdoor activities you could do if you don't have a wetland near you. Where could your youth go?*
    - *Could you use this note-making protocol to watch a video with your youth?*
    - *What strategies from this list might you use?*
        - Note: A pair-share might be helpful here so participants can talk about what they might try in their practice.

Conclusion (5 min)

- As a group, ask participants to make a commitment to trying something out.
    - *What can you try out in your facilitation tomorrow?*
- Thank participants for coming and encourage them to try out new strategies and share their successes and worries with each other.

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After the Session

- Email the participants:
  - *Thank you for your participation in the recent Click2Science session on" Enabling Active STEM Learning". I hope you found it useful and applicable to your practice. Making changes is never easy! Please let me know if you have any questions. You can reach me at CONTACT INFO.*
  - *Include a few of the strategies from the* Active STEM Learning Strategy List *for participants to try out.*

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

Active STEM Learning Strategy List

How can you get youth actively thinking and doing STEM? Here are some strategies for making passive learning more active. See what you can add.

Instead of this:	Try this:
Giving youth instructions on how to do a step-by-step activity	- Give youth a challenge and ask them to write the activity themselves - Leave out some steps and let youth fill them in - Omit a few materials and give youth a chance to request them - Encourage youth to write down any questions that come up as they explore during an activity
Showing youth a demonstration of a science phenomenon	- Asking youth to predict what will happen - Having youth do the demonstration themselves - Get youth to guess what would happen with a different arrangement of materials
Keeping a data table	- Keep the data table and use it to support or refute a prediction - Keep the data table and make an infographic out of the data table - Keep the data table and compare your data table with another group's

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