Professional Development Situation: Meeting

Skill Focus: Modeling Science Practices

Time Required: 30 minutes

EXPLORE THE CONCEPT

Participants will reflect on two styles of instruction in order to emphasize conceptual development.

Agenda

Exploring Concepts—20 minutes

Reflection–10 minutes

Materials

- Chart paper and markers
- Pens for participants
- Sticky notes or whiteboard

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 a reminder email about the meeting. 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 "Modeling Science Practices". 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 session

Copyright 2017
Board of Regents
University of Nebraska

- 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

Exploring Concepts (20 min)

- Greet participants as they arrive. Make sure everyone feels welcome and comfortable.
- Introduce the focus for the session: "Modeling Science Practices".
    - *We are now going to read a scenario and think about what could be done to help youth make strong connections to the content. In the first scenario, the content is specifically related to the ways that the sun, earth, and moon interact.*

Scenario One (10 min)

- Read the scenario aloud, slowly.
    - *The youth are trying to explain why the moon looks different on different nights, from full moon, to half, to quarter moon. The teacher hands the youth a worksheet with 8 empty circles on it and instructs the youth to draw the moon's appearance on different nights of the month. The youth then label the moons "waxing gibbous, waning gibbous, waning crescent, quarter, full, etc."*
        - *How does this help youth learn concepts? (It emphasizes memorizing vocabulary, not a deep understanding of WHY the moon looks as it does.)*
        - *What might you do to enrich the way that youth engage with the CONCEPTS of moon, earth, and sun movement?*

Scenario Two (10 min)

- Read this scenario aloud, slowly.
    - *The facilitator gives youth a flashlight and a ball and explains that they will be trying to replicate the phenomenon themselves. The facilitator displays a picture of a quarter moon and says to youth, "Designate one person in your group to be the 'Earth'. Using the flashlight and the ball, see if you can get the ball to look like this quarter moon from the 'Earth's' perspective."*
        - *How is this activity different than the first one? (It asks youth to try to engage the fundamental ideas—not just the vocabulary of gibbous, etc.--that explain the moon's movement)*
        - *How can this activity help the youth explore a concept?* (The deeper concept is how the moon and earth interact with sunlight, not simply the vocabulary)

Copyright 2017
Board of Regents
University of Nebraska

- *This is an example of a way to deeply engage youth in the "how and why" of science and how things happen in the world.*

Reflection (10 min)

- Draw a long line across a whiteboard or chalk paper. Write "conceptual" at one end and "shallow" at the other.
  - What kinds of activities do we have coming up in our program? Are they mostly conceptual, mostly shallow, or kind of in-the-middle?
- Have participants write on the continuum or place sticky notes for activities they have coming up.
- Debrief the activity.
  - *What are some activities we might be able to make more conceptual?*
- Give time for the group to help troubleshoot this activity to move it from shallow learning or memorization to deep conceptual engagement.

After the Session

- Email the participants:
  - *Thank you for your participation in the recent Click2Science training on "Modeling Science Practices". 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.*

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

Copyright 2017
Board of Regents
University of Nebraska

Copyright 2017
Board of Regents
University of Nebraska